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ROBERT ADAM: A NEW APPRECIATION

NOT since 1922, when the late Arthur T. Bolton published his monumental standard work on the "Architecture of Robert and James Adam," has there been, so far as we recall, any considerable book on the Adam period. A new one was certainly due, for even, or perhaps particularly, in these days of standardisation and mass production in building, no one who is genuinely interested in architecture can resist the spell of Georgian work, to which the Brothers Adam made so rich and distinctive a contribution.

Mr. James Lees-Milne, in his new book "The Age of Adam,"* has, however, given us no mere réchauffé of existing records; he has written a work at once original, scholarly and entertaining in the best sense of the word. The mood of the preface would probably be called "escapist" for, having drawn our attention to the wholesale destruction of historic work in recent years by our own people and by enemy action, he suggests that we should "soothe our minds —starved like our bellies—in nostalgic reflection upon that earlier, less progressive age, when politics was a game, society an art, and art a religion. And so," he adds, "our last solace is to let our minds drift, as often as they may, upon delicious tides of retrogression, away from the present quagmire of existence towards the quickened elegance of eighteenth-century living." We gladly yield to this literary enticement.

The author is, of course, mostly concerned with Robert Adam, the dominant member of the famous partnership, but he gives an overall picture of architectural development during the eighteenth century. He shows how Burlingtonian Palladianism, in its correctitude a reaction against the earlier freedom of Wren and his school, in turn declined with the quickening interest in Greek sources of inspiration, aroused by the researches of Robert Wood, Winckelmann, and Stuart and Revett. The time was clearly ripe for neo-classical development, and the Brothers Adam as professional architects were alert to the opportunities of the situation.

Robert left Scotland for Italy in 1754, and he made his famous excursion to Split in Dalmatia in 1757 to measure and record on paper the great imperial Roman palace there, and it was the prestige gained by the publication in England, in 1764, of the lavish folio on "Ruins of the Palace of the Emperor Diocletian at Spalatro" that set the brothers, who had settled in England by 1758, on the road to becoming the most successful and prolific architects of their time. It was Diocletian's palace that became the chief source of their ideas on domestic building.

As to the sources of their characteristic decoration, Mr. Lees-Milne writes: "The brothers derived the mode of grotesque and arabesque decoration, which we in this country firmly associate with their name, from first-hand study of Raphael's loggia at the Vatican (and we can safely assume from da Udine's Villa Madama as well) and then of the fountain-head itself, the original Roman catacombs whence the cinquecento artists derived their own manner. They, furthermore, had the advantage over the Renaissance artists in the study of the remains of Pompeii."

But the odd thing is that the characteristic Adam decoration had been introduced into this country half a century earlier at Kensington Palace and at Houghton, by the Palladian, William Kent. Another feature which we regard as characteristically Adam, the Venetian three-light window, had also been used long before at Burlington House and elsewhere. The basic elements of the brothers' style were already known to them before Robert went to Italy. In due course they were to make these almost essentially their own, and to be followed by an army of imitators and adapters.

The Admiralty Screen in Whitehall was one of Robert's earliest works after his return from the Continent, when his mind must have been full of fresh impressions of classical antiquity. It is not surprising, therefore, that we should be able easily to trace the source of the principal feature of this work—the archway with its flanking piers—which are clearly to be seen in the drawing done by Robert Adam under the influence of the catacombs, reproduced facing page 18 in this book.

Mr. Lees-Milne divides Adam's work into three periods: I The Early Period 1758-1770—Country Houses; II The Middle Period 1770-1780—Street Houses; and III The Late Period 1780-1792—Public Buildings. The first period begins with Hatchlands, near Guildford (the residence of Mr. H. S. Goodhart-Rendel), which contains some of Adam's earliest plaster ceilings; and it includes much fine work like the Adelphi (which almost brought the brothers to disaster), Shardeloes, Harewood House, Croome Court, Kedleston Hall, Bowood, Osterley Park, Syon House, Lansdowne House, and Kenwood. The second period includes Chandos House, 20, St. James's-square, Derby House, Grosvenor-square, and Home House, Portman-square. The third period includes Portland-place, Fitzroy-square, Charlotte-square, Edinburgh, The Register House, Edinburgh, and Edinburgh University. All these works, and many others, the author describes and assesses with a fine sense of critical judgment.

Mr. Lees-Milne brings out many points of interest about the career of Robert Adam; for example, the fact that so many of his buildings were begun by other architects. There appears to be little to show that these men took it badly when they were superseded or asked to collaborate, but, human nature being what it is, they could hardly have liked it. It is not suggested that Adam was guilty of unprofessional conduct. The fact would seem to be that his style became so fashionable that wealthy people building their own houses ran after him. Also, the reputation which he had achieved for business efficiency (unlike some of his contemporaries—James Wyatt, for example, his nearest rival) provided the additional economic reason for employing him. It is not surprising, however, that he made several enemies, the chief being Sir William Chambers, who kept him out of the Academy, and is said to have used his influence at Court to prevent Robert from receiving a knighthood.

* London: B. T. Batsford, Ltd. Price 21s. net.

Notwithstanding his professional eminence, Robert Adam remains an oddly elusive figure. It seems strange that at a time notable for its gossips and diary-keepers there should be so few contemporary references to him. The explanation must be that his great practice, which kept him journeying about the country almost constantly, allowed him little time for the indulgences of social life. He wrote little beyond his Spalatro folio and, with his brother James, the "Works in Architecture of Robert and James Adam." He had no time to keep a diary; if he had it would surely have been a lively one if we may judge from one of his few surviving letters which Mr. Lees-Milne quotes in full. How this short letter seems to bring Adam to life!

Another odd thing is that, notwithstanding his great practice, Adam never completely fulfilled himself as, for example, Wren did. His ambition to build a monumental public work in his lifetime was never realised. Edinburgh University, one of his last and finest works, was still unfinished at his death, and the scheme was never carried through as he intended; indeed, it was truncated and spoiled by later hands.

Adam, in his architecture, started out with a clear idea of what he wanted to do. In a letter to Lord Kames, in 1763, he wrote: "Painting and sculpture depend more upon good architecture than one would imagine. They are necessary accompaniments to the great style of architecture." His own work was to exemplify this principle fully. A good Adam interior is a complete and harmonious work of art in design, decoration and furniture. Adam designed everything that he thought to come within his province and left us a legacy of graceful design in household equipment that should be an inspiration to us in these stark times. He employed many notable artists and craftsmen to carry out his designs and to embellish his buildings—Chippendale, Zucchi, Angelica Kauffmann, Bartolozzi, Boulton, Carter, Ceracchi, Cipriani, the Hamiltons, Ibbetson, Pergolesi, Rose, Wedgwood, and many others. On all these artists and others and on contemporary architects the author gives brief biographical notes.

Robert Adam's work at its best was perfect in form and embellishment; at its worst it was still good by ordinary standards, though apt to become finical in its decoration, particularly during his middle period after he had acquired the patent of Liardet's stucco, which he used ubiquitously and with rather mass-produced effect. It was chiefly this element in his work, and the copying of it by his many imitators, that laid the Adam style open to the attacks of the critics.

Adam died in 1792 and was buried in Westminster Abbey. How fortunate for us that his drawings still exist. Numbering nearly 9,000, they were bought by Sir John Soane for £200 in 1833 and are now in the Soane Museum.

This well-written book, with its 200 reproductions of photographs and contemporary prints and designs, some of the latter in colour, is a notable contribution to critical literature dealing with the period. Anyone who is interested in the eighteenth century will read it with absorbed interest.

From the A.A. Members' Exhibition.

KERSEY, SUFFOLK. A photograph by Patrick Cutbush. **(See page 273.)**

NOTES AND NEWS

Architecture of the U.S.S.R.

THE exhibition of the architecture of the U.S.S.R. was opened on Tuesday afternoon at 66, Portland-place, W.1, by the Soviet Ambassador, who was welcomed by the President, Sir Lancelot Keay, K.B.E. The Ambassador, whose speech in Russian was translated, said that he saw in the exhibition a further cultural link between the U.S.S.R. and Great Britain.

An article on the architecture of the U.S.S.R. was given in our last issue, in which the historical background was surveyed and tendencies examined. While there is much interesting work shown (which benefits by the excellent presentation of Mr. Jack Howe and the R.I.B.A. Exhibition Committee), there is little to show any individual trend of architectural development. Of greater interest are the purely engineering projects, such as the Dnieper Dam and the design, by N. Colley, for the Stalingrad Stadium. The exhibition is open daily until March 20.

Sir Herbert Baker Scholarships.

THE Royal Academy, in considering candidates for election to the Herbert Baker Scholarships of Architecture, Sculpture, Painting and Poetic Literature, desires it to be known that the object of the Foundation is to enable advanced students and young practitioners to travel abroad for the study of the interdependence of the arts.

In making their selection the assessors will give consideration to persons of mature age and judgment; these, having had some experience of actual work in the world, will have learnt from their difficulties and dissatisfactions what to look for in further study. It is suggested that study should be given to the masterpieces of architecture, sculpture and painting, respectively, and to the great traditions of the arts.

Those who follow the calling of the arts have much to learn from one another, both for the benefit of their own craft and for the ordered beauty of art as a whole. As far as may be possible and desirable, the headquarters of the scholar studying in Italy should be the British School at Rome (the direction of which, it was hoped by Sir Herbert Baker, would tend more to the study of the interdependence of the great arts). Without making a long stay in one place, the scholar should visit some of those great centres of Europe where the arts have been brought to the highest development, and where the great practitioners have flourished: Athens, Rome, Florence, Venice, Paris, Chartres, Beauvais, Madrid, Toledo, etc. Notable modern examples of collaboration between architects, painters and sculptors should also be visited. A very long visit to one place is not advocated, as the prolonged contemplation of beauty, without work in the particular calling of the scholar, is somewhat conducive to dilettantism.

Within a period of six months of the conclusion of the course of study the scholar will be required to deposit at the Royal Academy the work done as testimonies of study, including a written and illustrated thesis on some special subject on the interdependence of the arts. The aim of the thesis should be a genuine contribution to the subject, for the use of succeeding scholars and of students of the Royal Academy.

The scholar will be expected to proceed on a course of study within a period of six months from the date of election, and to submit for the approval of the assessors definite proposals for the course.

The scholarship to be awarded in 1948 will be for an architect, and the amount available from the fund will be 200 guineas, to be paid to the scholar as follows:—

£105 at the commencement of the scholar's tour for study.

£105 on deposit and acceptance by the Royal Academy of the testimonials of study.

Candidates who desire to make application for election are required to send to the Secretary, Royal Academy of Arts, Piccadilly, London, W.1, by May 6 next, the following information:—

1. A letter of formal application, stating age, and giving particulars of previous study and experience.

2. A letter of recommendation from a responsible person who has personal knowledge of the candidate and his career.

PRINCIPAL CONTENTS

ARTICLES	Page
EDITORIAL: Robert Adam ..	269
CORRESPONDENCE	273
FRANK LLOYD WRIGHT: A Reassessment	274
COMPETITION NEWS	276
THE ART OF ENCLOSING SPACE. A.A. Discussion	284
PLANNING IN GERMANY ..	284
"IDEAL HOME" EXHIBITION ..	285
"PROGRESS REPORT ON BUILDING"	286
SURVEY AND DEVELOPMENT PLANS	287
STRUCTURAL RESEARCH AT B.R.S.	288
BUILDING WAGES	291
PRICES CURRENT OF MATERIALS	292
FUTURE CONSTRUCTION ..	294

ILLUSTRATIONS	
PERMANENT HOUSING FOR THE CITY OF BRADFORD. By J. T. Castle	277
COMPETITION: For Missing Naval Personnel Memorial, Liverpool ..	282

In the Future.

As seen from the barren present, the future London will be a wonderful place, and the recently published scheme for the city of Westminster, by Mr. J. Rawlinson and Mr. W. R. Davidge, certainly justifies this view. The plan (which was reviewed recently) is very far-seeing and is certainly grand in its conception. It brings home to the uninitiated the large area of London that is controlled by the Westminster City Council. But perhaps the surprise move in the scheme is the proposed preservation of that outstanding masterpiece of understatement "The Citadel," the Admiralty's war-time operations "H.Q." The retention of this is explained away on the grounds that it *may* come to be regarded by future generations as a monument to the country's finest hour. A laudable thought, but any bomb-scarred building would do just as well. Finest hour or not, the building hardly adds to the charm of its locality.

Railway History.

THE story of the development of our railways has been well recounted by Mr. Hamilton Ellis in his latest book, "The Trains We Have Loved." The book covers the comparatively short span of years of 1874-1914, but into these years is packed the tremendous development of the railway system. Mr. Hamilton exhibits a comprehensive knowledge of railroad history, and recounts pleasant memories of the early interiors of carriages. Here is a description of a dining car on the L.S.W.R. West of England express. "In the middle was a dining car that advertised its presence by a clerestory roof considerably higher than anything else. The colour scheme was without parallel. While the upper panels were officially advertised as 'salmon,' and were rather like tinned salmon when quite new, they weathered into a terra cotta brown in about a week. But to us who knew and loved the South Western it was above criticism. There was splendour even in the bright brass handrail inside the corridor windows and the first-class carriages with their blue broad cloth and profusion of gold lace; even the window straps and slings were truly gorgeous. The brown plush 'seconds,' which, like the 'firsts,' could be identified from afar by their lemon-yellow window frames, were admirable, and the 'thirds,' though dowdy, were solidly comfortable."

Many people might say that the carriage decoration to-day on some lines has not altered materially, but few would not agree that the old L.S.W.R. dining car obviously possessed a character of its own, a character somewhat at variance with the latest ideas of industrial design to-day.

Mr. Ellis also displays a keen eye for railway station architecture, for the local halt as well as the great London termini. King's Cross and St. Pancras are possibly as dissimilar externally as any two stations could be, but the difference is apparently evident even in the *smell* of the two stations. King's Cross has the reek of South Yorkshire coal, which is more pungent than that of Nottingham coal which pervades St. Pancras. The dissimilarity extends to the clocks which surmount these two stations. They invariably disagree.

Dr. Brikas Visits Britain.

DR. MAURICE BRIKAS, Deputy Director-General and Technical Adviser to the Greek Ministry of Reconstruction, arrived in London on February 27 under the auspices of the British Council to study housing and reconstruction methods in the United Kingdom. In London he will visit the Ministry of Town and Country Planning and the Royal Institute of British Architects, before leaving for a tour of Hull (March 5-11); Birmingham and Coventry (March 11-18); and Bristol (March 22-25). He will then return to London for the last few days of his stay (March 25-April 2), visiting Canterbury, Welwyn Garden City and a prefabricated housing estate at Romford, Essex.

A.R.C.U.K. Annual Report.

DETAILS are given in the annual report for 1947 of the Architects' Registration Council of inquiries held by the Discipline Committee in five cases relating to professional conduct. The Committee have also considered the extent to which an architect's name may properly be printed in a trade directory. They are of the opinion that an entry in a classified trade directory of an architect's name, firm and address, without payment, is permissible, but that to single out names for publication in a specialised directory, relating only to one type of building, such as cinemas or retail stores, would be equivalent to advertising, even though not paid for, and should not be permitted.

The Board of Architectural Education reports that during 1946 the amount received by the Maintenance Scholarship Fund was £8,088, and during 1947 £1,875 was expended on new awards and £4,660 on the renewal of existing scholarships.

Ten cases are noted where unregistered persons were prosecuted during the year at the instance of the Council for unlawfully practising or carrying on business under the title of architect. The Council also reports that its attention was called to a case in which the engineer and surveyor to a local authority had been described in building contracts and specifications as the architect to the local authority, although not registered and entitled to the description. The local authority, states the report, have agreed to amend the form of contract.

A total number of applications received under the 1938 Act and under Regulation 26 (2), (5), (6) and (7) for admission to the Register is given as 5,575. Of these, 3,929 were admitted and the number rejected 1,397. During the same period, from the passing of the 1938 Act to December 31, 1947, successful examination candidates were admitted to the number of 2,113.

Summer School for Planners.

THIS year's town and country planning summer school will be held at Cambridge, under the auspices of the Town Planning Institute, from August 23 to 28. Accommodation has been made available for 200 members at Trinity College, and additional accommodation will probably be arranged in adjacent colleges. The University authorities have also put the Mill-lane lecture theatres at the disposal of the school.

The form of programme will follow that of last year's school, and it is hoped that the Minister of Town and Country Planning, the Rt. Hon. Lewis Silkin, M.P., Hon. M.T.P.I., will once again give the opening address. The principal addresses will be limited to one per day. After each lecture the school will divide into groups of suitable size for discussion. Points raised will be put to the speaker by the group leaders when the school reassembles later in the day.

A fee of £9 9s. includes admission to all sessions of the school, residential accommodation and a copy of the report of the proceedings. For part-time members, who have to make their own accommodation arrangements, the fee is £1 10s. 6d. for three days or less, or £3 3s. for four days or more. It will probably be necessary to limit the number of representatives from each authority. Applications should be made to Mr. A. R. Potter, the secretary, Town and Country Planning School, 18, Ashley-place, London, S.W.1.

West Indies University College.

MR. GRAHAM DAWBARN, F.R.I.B.A., is the architect for the West Indies University College which is being built in Jamaica. The buildings, which are being erected on a site covering about 600 acres between Long Mountain and Hope River, will include a central nucleus of convocation hall, arts, library and administrative units, clinical students' hostel, halls of residence, students' union, science building, art gallery and museum. Accommodation is planned for 2,000 people and will be capable of expansion.

Winslow Hall to be Preserved.

WINSLOW R.D.C. has requested the Bucks County Council's views on an application which has been received for a licence to demolish Winslow Hall, Winslow. According to a correspondent, this building is included in the list of monuments selected by the Royal Commission on Historical Monuments (England) as being specially worthy of preservation and as a fine example of the domestic architecture of the 17th century, in addition to which there is the unusual feature that very complete records of the actual building of the Hall still exist. The house, which is attributed to Sir Christopher Wren or one of his pupils, is in exceptionally good order.

The Council has been informed by the Ancient Buildings Section of the Ministry of Town and Country Planning that they greatly hope that it may be possible for some use to be found for this distinguished building, for its demolition would be widely regretted. The Council has set up a sub-committee to consider how the property could be suitably used by the County Council, and, in the meantime, propose to take steps to prevent it being demolished or altered without their consent.

Professional Announcements.

MR. H. C. HAMPTON, A.R.I.C.S., Assoc.M.Inst.C.E., M.I.Mun.E., deputy borough engineer of Acton since 1940, has been appointed housing director to the borough of St. Marylebone, following the resignation of Mr. J. E. Butt, who has taken up an appointment abroad.

MR. FREDERIC A. BROAD has retired from the position of quantity surveyor and deputy borough architect to the Swansea Corporation and has commenced private practice as a chartered quantity surveyor at 52, Pinewood-road, Swansea, Glam. (Tel. Swansea 3229).

MESSRS. STONER AND SONS, quantity surveyors, of 66, Lincoln's Inn Fields, W.C.2, are moving to 115-119, Bankchbrs., 329, High Holborn, W.C.1, on March 15. (Tel.: Holborn 7582 remains unchanged.)

TIMBER FROM U.S.A.

AMERICAN BUILDERS' OFFER TURNED DOWN

THE Home-Builders' Association of the United States have offered to house-builders in this country a quantity of timber sufficient for 10,000 houses. MR. L. B. VENNING, Secretary of the Federation of Master Builders, informed us last week that the suggestion was made that American house-builders should make an effort to save one-third of a standard of timber on every house they build and the accumulated saving be shipped to this country for house-building purposes. American builders agreed to this, but stipulated that the English builders arrange for its transportation and that the timber be used only for the erection of houses for sale in this country. The houses may be sold to private purchasers or to local authorities and would be erected on sites where builders had already installed road services and sewerage.

Mr. Venning explained that the Federation approached the Ministry of Health two weeks ago to get the necessary permission to go ahead with the scheme and had been in communication with Sir John Wrigley.

The Press Officer, Ministry of Health, informs us that the matter was discussed by a deputation from the Federation and Ministry officials, when it was pointed out by the latter that the Minister could not give permission for the arrangement to go forward as it would involve commitments in dollar expenditure which in the present situation would not be fully justified. In any case, under Circular 92/46 builders could erect houses for sale to local authorities, although recent circumstances made it necessary to give priority to houses for miners and agricultural workers.

COMING EVENTS

Monday, March 8.

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS.—"The Public Corporation in British Experience," by Sir Arthur Street, G.C.B. 12, Great George-street, S.W.1. 5.30 p.m.

LONDON MASTER BUILDERS' ASSOCIATION (CENTRAL AREA NO. 3).—Speaker, Mr. D. C. Burgess, M.I.O.B., Horse Shoe Hotel, Tottenham Court-road, W.1. 12.30 p.m. (Southern Area): Speaker, Mr. Roy King, Zeeta's Restaurant, Croydon. 2.30 p.m.

Tuesday, March 9.

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS.—Annual conference. 12, Great George-street, S.W.1. All day.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—"The American Scene," by Mr. Howard Robertson, F.R.I.B.A. R.I.B.A. 66, Portland-place, W.1. 6 p.m.

THE INSTITUTION OF CIVIL ENGINEERS.—"Air Survey and the Road Engineer," by Professor C. A. Hart, M.Sc. (Eng.), and Mr. B. F. J. Bradbeer, A.M.I.C.E. Great George-street, S.W.1. 5.30 p.m.

MIDLANDS FEDERATION OF BUILDING TRADES EMPLOYERS.—Speaker, Mr. F. M. Sleeman. Midland Hotel, Birmingham. Luncheon 1 p.m.

Wednesday, March 10.

TOWN AND COUNTRY PLANNING ASSOCIATION.—"The Act—Questions and Answers." Four speakers. 28, King-street, W.C.2. 6.15 p.m.

LONDON MASTER BUILDERS' ASSOCIATION (Central Area No. 1).—Speaker, Mr. D. C. Burgess, M.I.O.B., Derry and Toms Restaurant, Kensington. 2 p.m. (South-Eastern Area): Mr. H. H. Prall, F.R.I.C.S., to speak on the Town and Country Planning Act, 1947. Black Horse Hotel, Sidcup. 2.30 p.m.

ROYAL SOCIETY OF ARTS.—"The Trade and Technical Press," by Mr. R. E. Dangerfield. John Adam-street, Adelphi, W.C.2. 2.30 p.m.

THE ENGINEERS' GUILD.—A discussion on "The Guild as an Association of Professional Engineers." Caxton Hall, Caxton-street, S.W.1. 6 p.m.

Thursday, March 11.

THE INSTITUTION OF STRUCTURAL ENGINEERS.—"A Comparative Study of Engineering," by Mr. S. J. Crispin, L.R.I.B.A. 11, Upper Belgrave-street, S.W.1. 6 p.m.

FROM "THE BUILDER" OF 1848

The Builder, Saturday, March 4, 1848.

THE LIGHT, AIR AND HEALTH TAX.—In the Commons on Thursday last week, Lord Duncan brought on his motion for the immediate and total abolition of this now more and more than ever unpopular and offensive tax. He entered pretty fully into its history and demerits, pointing out the fact that windows were no more a criterion of the value of the house, or the ability of its occupant, than were the buttons on a coat of the merits of the man, or the weight of his purse. Mr. Hume scouted the idea of administering a sanitary antidote to the people mixed up with such a bane as the light and air tax. All—even the Chancellor of the Exchequer himself—admitted the indefensibility of it on its own merits, and it was even clearly shown that, independent of its sanitary bearings, the pressure of it on the people was absurdly and even preposterously unequal . . . but on the motion being pressed to a division the Government and its thick and thin supporters outvoted the more consistent members by a majority of 160 to 68.

Timber from Finland.

THE Board of Trade announced on Tuesday the conclusion of a trade agreement with Finland whereby an unspecified amount of sawn softwood, plywood and other timber products is to be supplied by that country in return for coal. Wood pulp and pitprops are also to be sent.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Houses by Direct Labour.

TO THE EDITOR OF *The Builder*.

SIR,—I have read with interest Mr. Granville Berry's reply to the letter from me that you were kind enough to publish in your issue of January 16.

I am at a loss to understand the tone of suppressed indignation informing Mr. Granville Berry's letter; for although, unfortunately I agree, I was not at Harrogate, and, therefore, did not have the opportunity of reading the introductory remarks he then made, I studied very carefully the report in your issue of December 19, and in my letter carefully pointed out that I knew that a summary, however fair, could not always reproduce exactly the tenor of a speaker's remarks.

The purport of my letter was to point out that any statement of the claims made for Direct Labour Departments should, if it is to give rise to profitable consideration, be accompanied by an indication of the criticisms which have been expressed as to their operation.

Mr. Granville Berry deprecates my saying that Direct Labour Departments cannot be maintained unless, without tendering, they obtain contracts at higher prices than would be paid to a contractor. He continues by remarking "if the contractor loses one job it does not usually much matter to him; if the local authority Direct Labour Department does not get the job then its whole organisation must close down and the services of its employees be dispensed with." The implication from this is that such departments can only be kept alive if:—

(a) Under a competitive system of tendering, they always submit the lowest tenders and so obtain the contracts, or

(b) They are allotted a certain number of contracts without the necessity of tendering competitively.

The first alternative may result in work of inferior quality; the latter, although producing work of adequate quality, will do so at a greater cost to the ratepayer than necessary, since work of the same quality could have been secured from the private contractor at a lesser figure because, as Mr. Granville Berry points out, the private contractor is able to conduct his business in a wider field than the Direct Labour Department.

Surely these arguments go to suggest that a Direct Labour Department can only exceptionally be justified in the interests of efficiency or economy.

I hasten to add that I have no wish to cast any reflection upon officers of local authorities who, I am sure, in making recommendations as to whether or not a Direct Labour Department should be formed, are always concerned to keep before them the interests of their ratepayers.

D. C. MALLAM,
Director, Federation of Associations of Specialists and Sub-Contractors.

Dacre House,
Arundel-street, W.C.2.

Standard Method of Measurement, Fourth Edition.

TO THE EDITOR OF *The Builder*.

SIR,—I have noticed Mr. Willis's letter in your issue of February 20, and two points only appear to call for comment:

1. He states, "My booklet was prepared in part as a supplement to my text books. . . ." Taking his booklet, his appeal was first of all to quantity surveyors and builders, and it is only in the second paragraph that it states, "The booklet should also be of value to those students. . . ."

As a summary without any comments, quantity surveyors and builders would welcome it. May we now take it that the comments were for students only and not for quantity surveyors and builders?

2. I note that Mr. Willis appreciates that quantity surveyors can, if they wish, "contract out." The liberty of the subject (in this case the practising quantity surveyor) is a priceless possession.

GEORGE SPENCER.

26-27, King-street, E.C.2.

From the A.A. Members' Exhibition.

A SHOP AT OKAYAMA, JAPAN. A photograph by P. O'Toole.

ARCHITECTS AND PHOTOGRAPHY

A.A. MEMBERS' EXHIBITION

AN interesting collection of photographs by members of the Architectural Association is now on view at 34-36, Bedford-square. The subjects and views have been chosen with originality in an endeavour to break away from the commonplace. A notable example is "Kersey, Suffolk" (illustrated), by Patrick Cutbush. It is a striking view with its strong light and shade of this picturesque Suffolk village. "Fribourg, the West Porch," by R. A. B. Hitch, is indeed an unusual view; the sculptured figures have dramatic character. The shop in Okayama, Japan (also illustrated), by P. O'Toole, shows how Western influence has reached that country. No doubt if one visualises the colour scheme the effect would be gay and decorative.

Amongst others, the exhibits of Bryan Westwood are outstanding; his view, "Approaches to Tromso," suggests solitude and grandeur. Eric Jarrett's work is well known for his unusual and detailed subjects; "Norwegian Fish Boat" is first-rate. Norman Westwood is another keen amateur; particularly attractive are his views of "Le Puy" and "Waiting for the Tide." Space prevents a fuller note on many other attractive prints with a wide variety of subjects.

State Rooms on View.

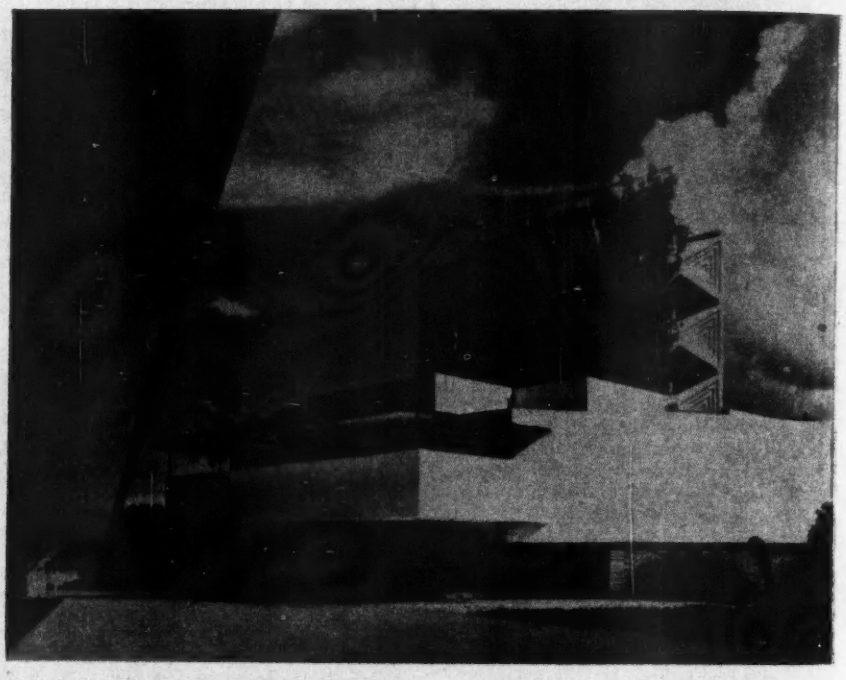
On each Wednesday, Thursday and Friday from March 27 to October 23 the State rooms at Penshurst Place, Kent, will be opened to the public by Lord de L'Isle and Dudley, V.C., from 2 p.m. to 5 p.m. at an admission charge of 2s. 6d. for adults and 1s. 6d. for children.

FRANK LLOYD WRIGHT

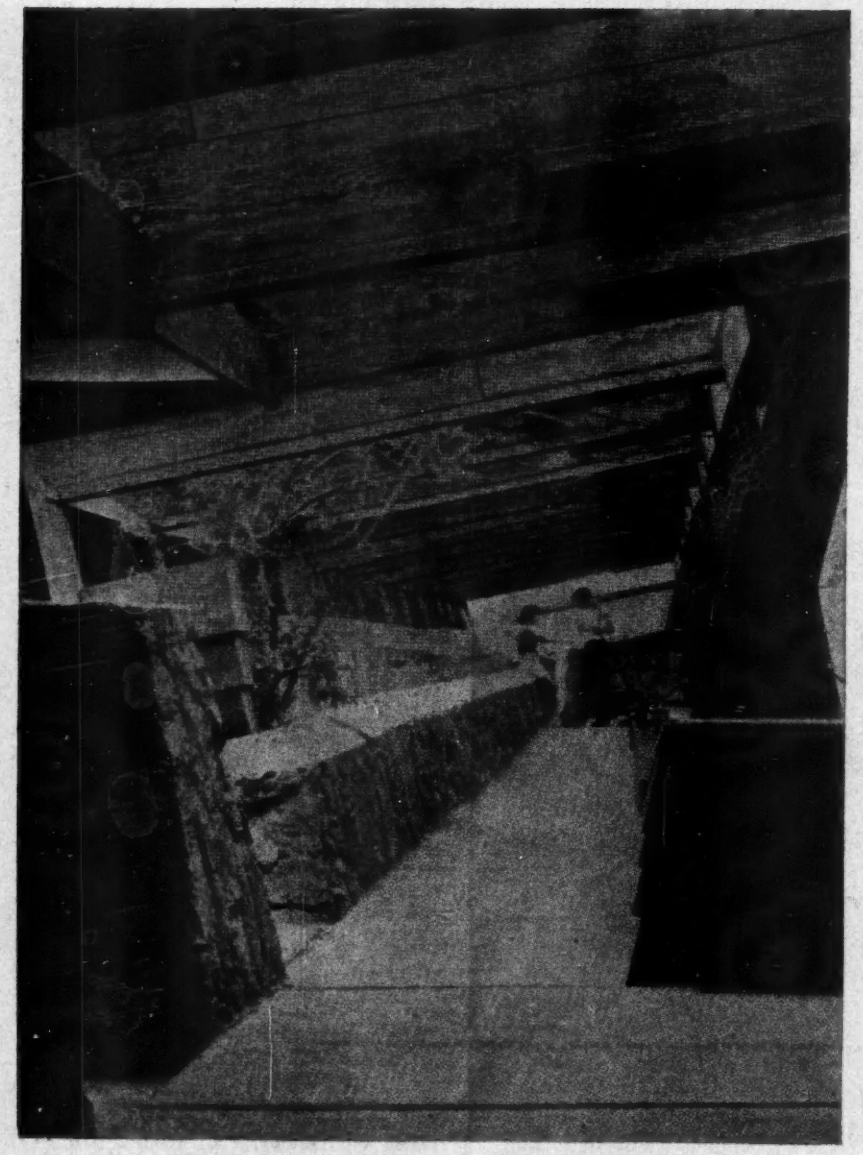
A REASSESSMENT

LONG before 1939, when he visited this country, Frank Lloyd Wright had become something of a legendary figure. He was widely known as the author of a new kind of architecture—"Organic" architecture, as he called it. We knew, of course, that he was a pupil and disciple of Louis Sullivan, the first great American rebel against European architectural orthodoxy, who had astonished the world with his Transportation Building at the World's Fair at Chicago, in 1893; but only a few British architects visiting the United States had met and talked with Wright, though his work was familiar in this country from illustrations published in the American architectural magazines. It was, therefore, with a keen sense of expectancy that, in 1939, we received the news that he had been prevailed upon to come to London to deliver, under the auspices of the Sulgrave Manor Trust, a series of lectures at the R.I.B.A.

Those meetings in the early summer of 1939 will be vividly in the recollection of many to-day, and it is difficult to realise that they took place nearly nine years ago. To think of them is to revive memories of ominously calm summer days, with Hitler fulminating against the "effete democracies" and threatening the imposition of a "New Order" on Europe by force. Against this menacing background we recall those crowded meetings at the R.I.B.A., with Frank Lloyd Wright, looking like a benevolent and rather elderly lion, prophesying in a soft American drawl the advent of a new order in architecture—an order that knew no "Orders."



FLORAL-CHAPEL, FLORIDA SOUTHERN COLLEGE. Exterior from Esplanade.



ARCHITECTS' CAMP IN ARIZONA DESERT.

He spoke, as we remember, extempore and without notes, and his message, though somewhat involved and obscure in parts, was received by those eager and largely youthful audiences as the word of an inspired prophet. However indefinite his utterance on the technicalities of "Organic" design, he made it clear that in his view, if we were to have a living architecture, the past must be forgotten and that our only hope of salvation lay in a return to the simple life (someone at question time called this "Escapism," but he would not have it). The modern city, he said, was an anachronism and should be abolished, though he conceded that historic parts of London, for example, might well be preserved as museum pieces. Not very long after, Hitler had done much to give effect to this ideal, though he might have left us a few more of our museum pieces.

What result Frank Lloyd Wright's teaching would have had in this country if the war had not occurred it is, of course, impossible to say, but he clearly inspired the younger men with his new philosophy. Some few tentative experiments in "Organic" design have, in fact, been made, but the manner cannot be said to have caught on. We shall have to wait for a general resumption of private building to see whether or not the seed has fallen on stony ground.

Whatever Wright's influence may be in the United States, he is clearly good publicity, for the January issue of the "Architectural Forum" is entirely devoted to his work. Most of the illustrations are of new projects, but some are of executed works, a proportion of these being familiar. The text, which appears to have been written entirely by the architect, has all the confidence, freshness and

originality of the man himself. The whole thing is a remarkable revelation of a remarkable personality. The designs are those of an original and profusely imaginative mind.

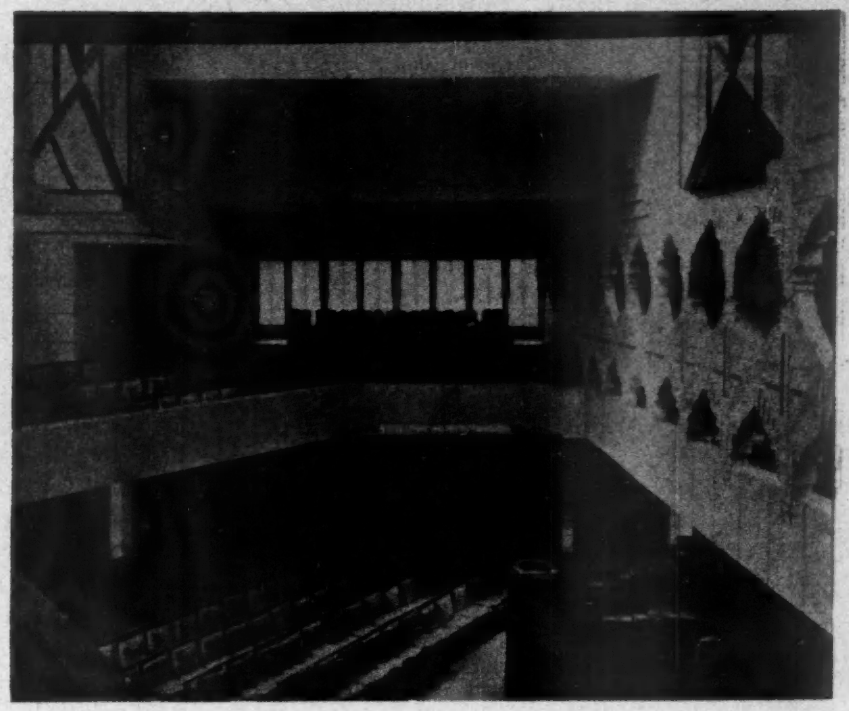
The first illustrations are of the so-called "Usonian" houses ("Usonia" is the name Samuel Butler gave to the U.S.A. in "Erewhon"). The chief characteristics of these houses are their "open" plans, their comparatively small amount of wall, and the use of large areas of glass window. A "Usonian" house, says Wright, "is always hungry for ground, lives by it, becoming an integral part of it." We remember that in one of his London lectures he said that the house should "love the ground," and that it should not be possible to see where it ended and where the garden began. Hence all his houses appear to be surrounded by, and overgrown with, luxurious vegetation. Some of the plans shown are of the straightforward, square or rectangular type, but others are fantastic in their geometrical complexity. Polygons, rhomboids, triangles, circles, crescents are combined in extraordinary intricacy. In one or two of the plans one looks almost in vain for a right angle. These houses may be amusing as week-end homes for wealthy American people, but they must be difficult to live in and, with their long, drawn-out plans, inconvenient to run. They would seem to offer little that could be usefully adopted over here. They are houses not for the million, but for millionaires.

Another extraordinary type of house is the "Berm" house, designed for "co-operative workers" in Detroit, Michigan. The scheme, says Wright wittily, was "abandoned for lack of co-operation." We are not surprised, for these houses, with their sloping earth banks reaching up to long, narrow slit-like windows, remind us of nothing more than strong points or machine-gun posts in a fortified line. The earth banks would provide a nice problem in damp-proofing.

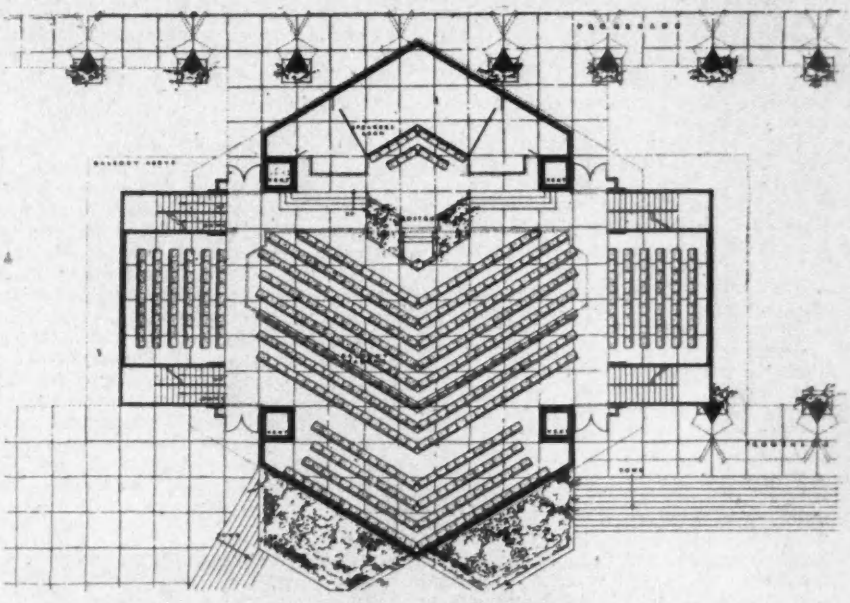
Some of the schemes make dramatic compositions, particularly where the architect is designing for an unusual site, like a cliff with foreshore or a mountain top. In such cases he achieves striking effects by the contrast of strong vertical and horizontal masses, and he is a master of the projecting roof and the cantilevered balcony.

Frank Lloyd Wright is nothing if not various, and it is quite impossible to classify his designs. Some look like good plain modernism; others are fantastic beyond description. Some display considerable ingenuity in planning, like the Mortuary for Nicholas P. Daphne, of San Francisco. Says Wright (the quotation is a good example of his unconventional style): "Nicholas P. Daphne called me after midnight a year or so ago, to say that because he had bought the finest lot in San Francisco he wanted the best architect in the world to build a mortuary on it. Nich. asked me if I had ever built one. I said no, and I thought that was my best qualification for doing one. So he gave me the job. Of course I had to 'research' a good deal and that nearly got me down. I would come back home, now and then, wondering if I felt as well as I should. But Nich. had a way of referring to the deceased, always, as 'the merchandise,' and that would cheer me up."

The scheme, which is what we should call a crematorium, consists of five circular chapels around a central chamber, each having its own garden. Here five simultaneous funerals may be conducted so that one is not too aware of another. Wright says he has provided a colourful, happy environment abundant with music, in an attempt to "take some of the curse off the undertaker's official proceeding."



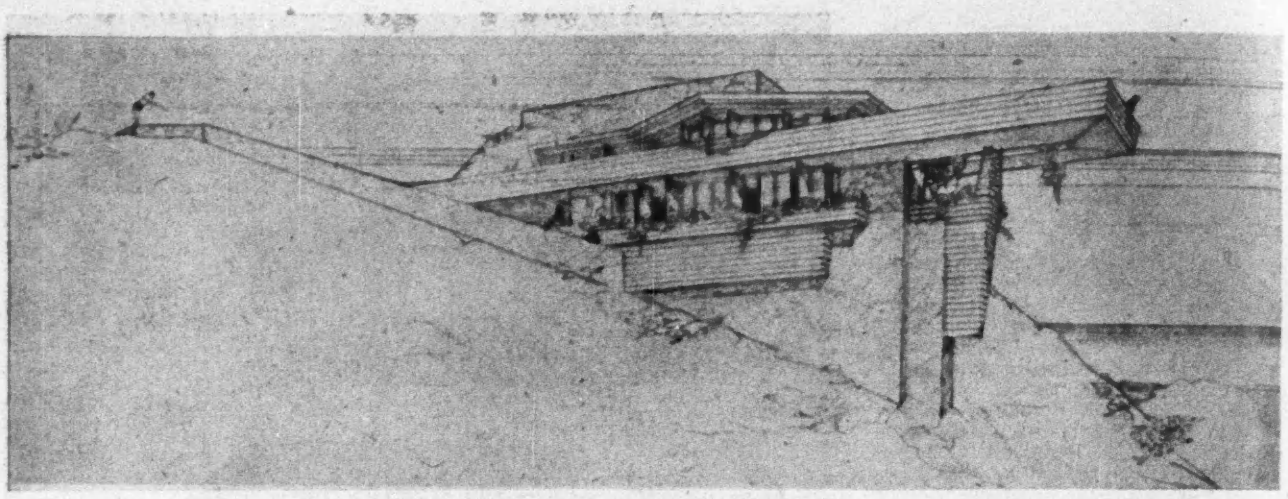
The Interior.



FLORAL-CHAPEL, FLORIDA SOUTHERN COLLEGE. Ground-floor Plan.

Another remarkable design is for a hotel at Dallas, Texas. This has no interior corridors, regular windows on the street or stores below. "All supports are set back from the property lines to allow clear glass surface all around the street frontage, the entire ground floor being transparent from side to side of the entire ground area. Because the building is in the form of an open court, the centre of this space will be in bright light and becomes a large water basin over the service features below." Wright adds: "Should any guest prefer to turn from the dazzling beauty of this interior to view the street, the view is available by openings provided for that purpose."

Another set of illustrations shows a design for Florida Southern College, Lakeland, Florida, a great scheme of college buildings laid out unaxially, with veritable forests in between. Wright says that "when building is completed, the U.S. will have at least one example of the cultural value of organic buildings well suited to time, purpose and place." Parts of the scheme have been carried out, and the Floral Chapel and Reading Room are illustrated by photographs and plans. The Chapel is a strikingly original design, showing the architect's weakness for originality at all costs. The plan, with its main seating arranged chevron fashion, with rectangular wings at the sides, is a strange one. If every seat is to face the rostrum, then clearly there is nothing better than the



"EAGLE FEATHER," IN THE HIGH HILLS OF SANTA MONICA, CALIFORNIA.

semi-circular arrangement, but this, no doubt, is too obviously traditional for F. Ll. W. And how dark it is under the galleries! Is this really "organic"?

Some striking illustrations are given of the windowless Johnson Administration Building at Racine, with its internal forest of "dendriform" columns. One may well ask: "Are your columns really necessary?" To judge from the fortress-like walls it should have been possible to support this roof with plain steel girders or reinforced concrete beams, and so keep the interior space free from encumberment. But perhaps this also would have been too obviously traditional.

The architects' camp at Arizona Desert, also illustrated, includes some odd-looking work. There may be some practical reason for the sloping roof and inward slanting walls of the corridor illustrated, but the effect makes one slightly dizzy.

Frank Lloyd Wright has done great work for architectural progress in showing the exciting possibilities of non-traditional design, in developing the "open" plan, and in demonstrating the effective use that can be made, within and without, of natural materials in simple combinations and without ornament. He has shown, too, how to design buildings so that they shall merge with the landscape and not compete with it. All this he has done, and much more, and British architects are foremost in acknowledging his genius. The danger is that the younger school of architects may be tempted to follow him not merely in his rational adventures in design but in his eccentricities as well. There have been some indications of this in recent students' exhibitions. We have painful recollections also of one or two experiments in house design in the Frank Lloyd Wright manner in which the architects (young and inexperienced men), using some of the F. Ll. W. tricks of design, succeeded only in producing what appeared to be large and rather inefficient hen-coops.

Frank Lloyd Wright, we fear, cannot be transplanted. He is too diffuse. We haven't the available land for these sprawling layouts and our climate is not really suited to his extremely "open" type of planning with its large areas of glass window; nor have we the fuel to keep such buildings warm in winter. If Frank Lloyd Wright is to be a vital influence in this country, then his work must be studied critically and not merely copied. G. J. H.

*** The photographs and plan accompanying this article are reproduced by courtesy of the *Architectural Forum*.

COMPETITION NEWS

NEW TRAFFIC ARTERY, STOCKHOLM

THE Stockholm Town Planning Board has announced an international competition for the planning of a new traffic artery, including a large bridge or tunnel between the southern and western parts of the Swedish capital. The total sum set aside for prizes and the purchase of plans is £4,100, the first prize being £1,380. The competition will be closed on April 1, 1949.

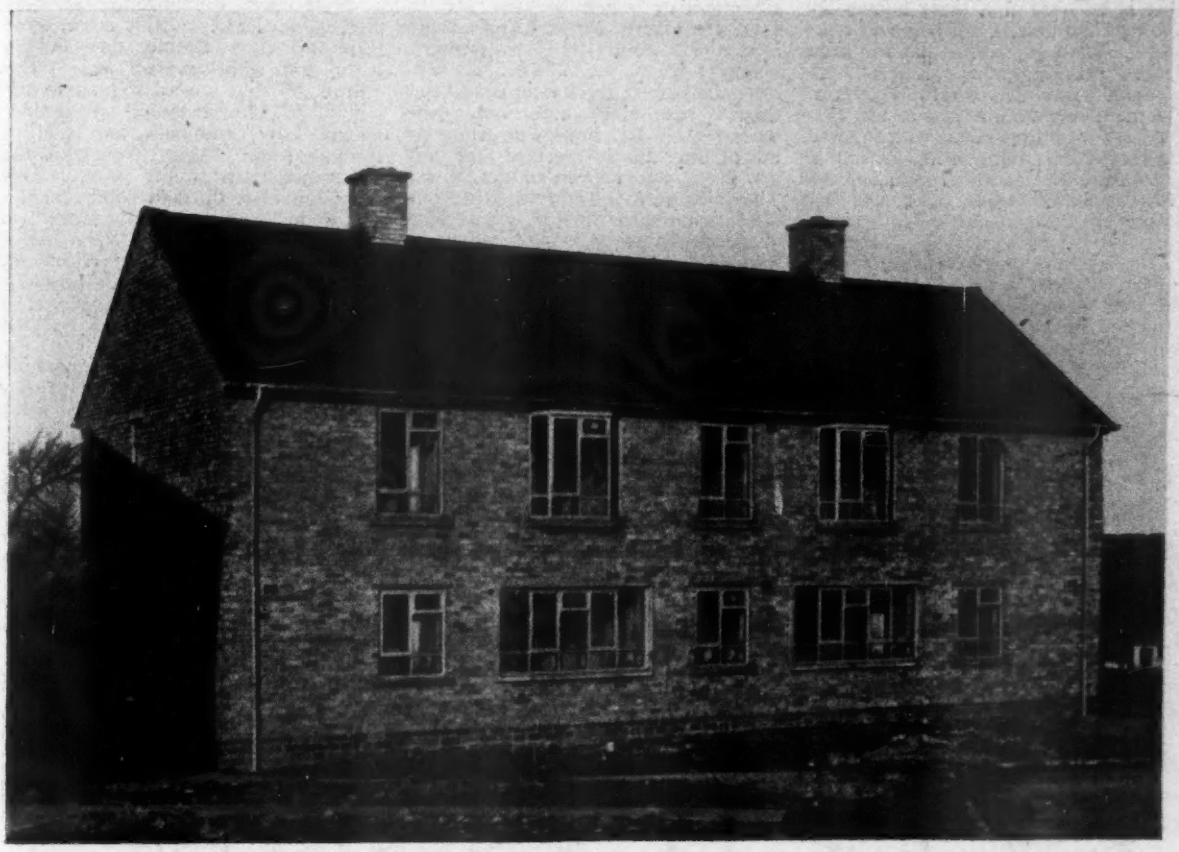
Stockholm is built largely upon a number of small islands. During the past ten or fifteen years several bridges have been built to connect the different parts of the town, the largest being the Western Bridge (1,800 metres, with two spans of 204 and 168 metres), which is illustrated on this page, the Skans Bridge (565 metres, 112-metre span), and the Traneberg Bridge (700 metres, 181-metre span). The central island of the town, which comprises the mediaeval Old City, is now connected with the southern part by an ingenious system of multi-level bridges and runways, and similar arrangements are planned for the traffic between the Old City and the business centre in the northern part of the town.

The new artery, called "Osterleden," which is the subject of the competition, will be an important link in an inner circle of roads included in the future plan of Stockholm. The principal components of the "Osterleden" will be: a high bridge with a 500-metre span or a tunnel across the inlet to the Stockholm inner port; a main artery across the island of Djurgarden; a connection between this island and the mainland by means of a bridge or tunnel; and, finally, an extensive system of approaches.

Entries will be judged by the following jury: Professor Sir Patrick Abercrombie; Hakon Ahlberg, architect; Anders Ahlen, civil engineer; David Anger, civil engineer; Professor Anker Engelund; Harald Goransson, the Commissioner for the Harbour Department; Hans Von Heland, assistant city treasurer; Sven Markelius, city planning director; Ernst Sundstrom, civil engineer; Gunnar Wetterling, city architect.

Conditions, maps, etc., are obtainable against a deposit of 100 kroner (£6 16s. 6d. approx.), which may be deposited through a Swedish consulate, from the Town Planning Board of Stockholm (Stockholms Stads Stadsplanekontor, Stockholm). A short summary of the programme will be sent, free of charge, by the Town Planning Board on request.

THE WESTERN BRIDGE, STOCKHOLM.



The "Don" type, for aged persons. Four 2-bedroom flats in one block.

PERMANENT HOUSING FOR CITY OF BRADFORD

J. T. CASTLE, A.R.I.B.A., A.M.T.P.I., CITY ARCHITECT

THESE HOUSES ARE THE FIRST OF THE post-war type, and contracts are in hand for approximately a thousand of them on four estates in different parts of the city. Bradford is one of the few authorities which are building houses of different accommodation, and types are now in the course of erection which include dwellings for aged persons.

The aim of the Bradford Housing Committee has been to build houses of different accommodation at the same time rather than to concentrate on the three-bedroom type only.

The new estates total 250 acres, and on each of them sites have been allocated for open spaces, schools, shops, etc. On January 1, 1948, there were 1,005 permanent houses contracted for, of which 183 had been completed. The following types are being erected:—(a) four-bedroom houses for seven people, 69; (b) three-bedroom houses for six people, 60; (c) three-bedroom houses for five people, 738; (d) two-bedroom houses for three people, 94; (e) one-bedroom houses for two people, 44.—Total, 1,005 houses.

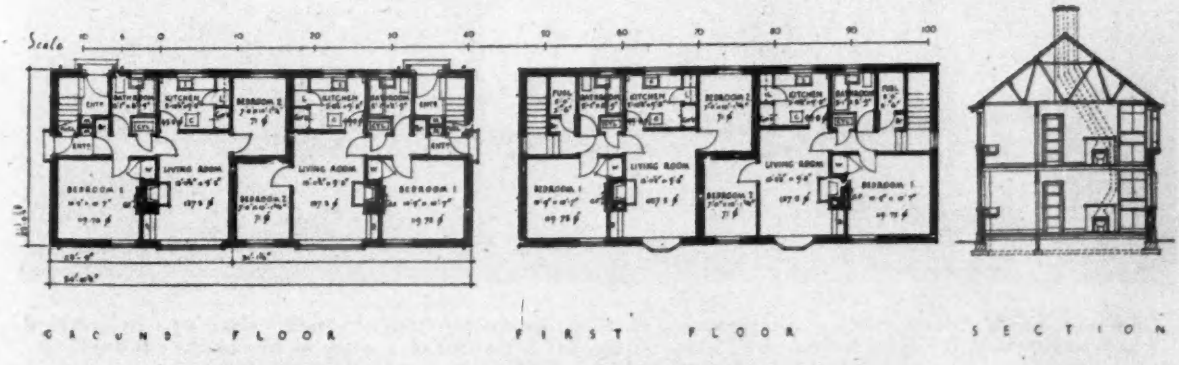
It will be noted that the larger houses comprise about 12 per cent. of the total, and the one-bedroom and two-bedroom houses about 13 per cent. of the total, leaving 75 per cent. for the three-bedroom type.

ONE- AND TWO-BEDROOM UNITS.—The groups (d) and (e) were primarily designed for aged persons' dwellings, and these are provided on each estate arranged in small groups of an average of five blocks, each containing four flats. Although grouped together in convenient positions for shops, etc., they are not segregated from the rest of the community.

There are two post-war types of these houses, the "Dent" and the "Don."

The "Dent" type has an area of 474 ft. super a flat, and was designed to face south. It contains a working kitchen, living-room, double bedroom, combined bath and w.c., larder, and fuel store.

The "Don" type is similar, but has two bedrooms so as to provide for a relative or nurse living with an aged person. The floor area of this type is 548 ft. super. It will be noted from the plans that although a coal-store has been provided within the building, it is situated outside the inner entrance door to each flat.



The "Don" type house, for aged persons (south-east to south-west aspect).

It is believed that these houses are amongst the first of the post-war types to be erected. Bradford has for some years provided these small self-contained dwellings for the aged, and the main improvements over the 1939 type are in the provision of a separate bedroom and living-room instead of a combined bed-sitting-room, together with increased areas of rooms and improved fittings and room arrangements.

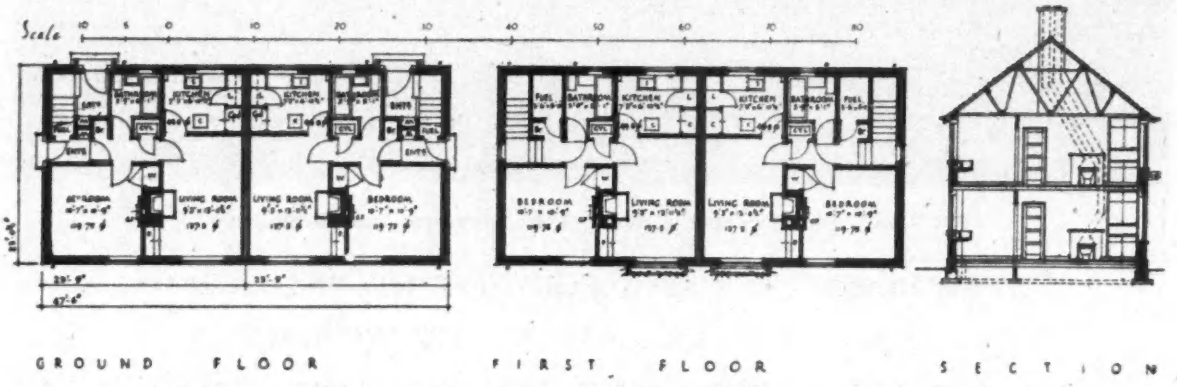
The average contract figure for the "Dent" works out at £723 10s. each flat, for a one-bedroom flat of 474 ft. super. The average contract figure for the "Don" works out at £810 each for a two-bedroom flat of 548 ft. super. A block of four of these flats is accommodated on a site area of about 700 sq. yds.

THE LARGER TYPES OF HOUSES.—The first of the houses in groups (a) and (b) is now being completed. The post-war type in group (a) are known as the "Holme," and comprised the centre houses in blocks of four or six. The floor area within the walls, including an internal store, is 1,166 ft. super. Each is designed to accommodate seven persons and to have a southerly aspect. The accommodation comprises living-room, dining kitchen, wash kitchen, w.c., store, fuel store, three double and one single bedroom, bathroom with second w.c. The houses in group (b) are of the "Laver" terrace type, and are the centre pair in blocks of six. The floor area is 1,044 ft. super plus an external store of 36 ft. super. They are designed to take six persons and to face north or east. The accommodation comprises living-room, dining-room, wash kitchen, w.c., fuel-store, outside store, three double bedrooms, bathroom with second w.c.

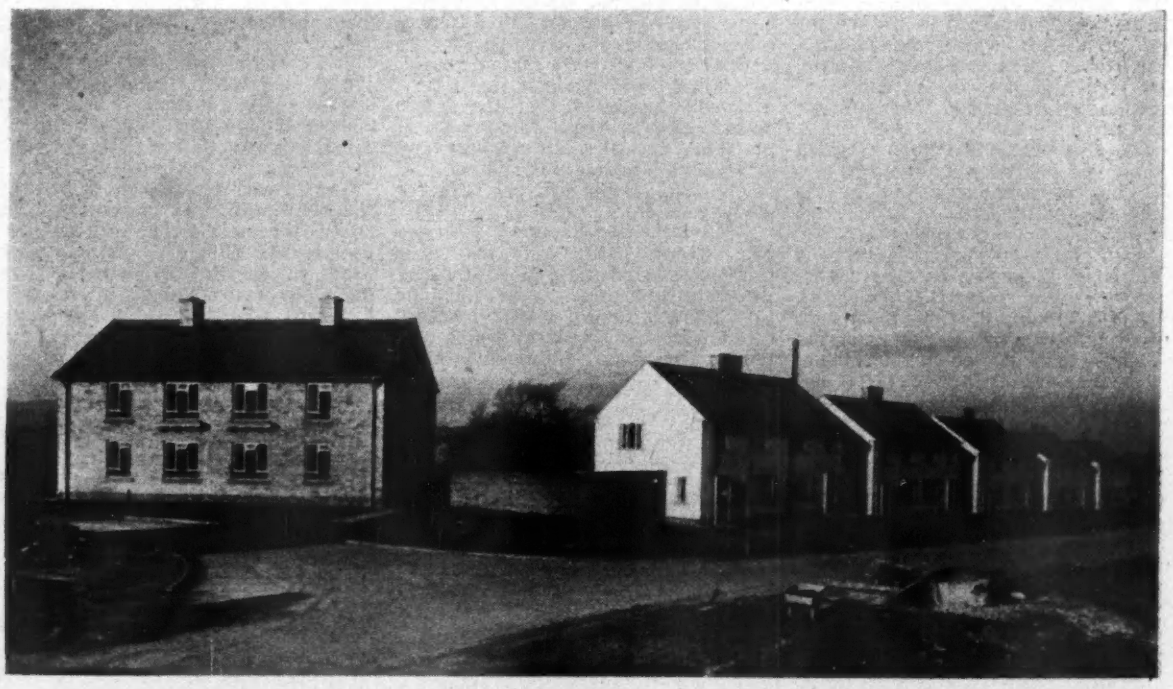
THE NORMAL THREE-BEDROOM TYPE.—The typical three-bedroom house for five persons is covered in group (c) and there are four types. The "Nidd" and "Burn" types are now being superseded by the "Nidd A" and "Burn A," but are on the same plan, although having only one w.c.

The "Nidd A" has been designed to take five persons and to face in a southerly direction. The area is 988 ft. super, plus an external store of 36 ft. super. The accommodation comprises a living-room, dining-room, working kitchen, w.c., fuel, outside store, three bedrooms (two double, one single), bathroom with second w.c. The "Burn A" has a similar plan to the "Nidd A," but the living- and dining-rooms are combined to form a through room. Apart from this the accommodation is the same. This provision of a through room enables sun to be brought into the house on either side, and so is a very useful type. Where architectural considerations demand the "Burn A" house, it can be used on the south side of a road to balance the "Nidd A," the elevations being similar.

CONSTRUCTION.—The construction and materials of these houses are on traditional lines. The roofs are being tiled with grey and brown hand-made tiles, or slated with a grey-blue Westmorland or blue Welsh slate. The walls are of facing bricks, chiefly of a buff colour, with a stone plinth up to floor line. Alternately, the walls above the stone plinth are in common bricks, colour washed. As an experiment, two pairs of houses have been colour-washed with colour prepared

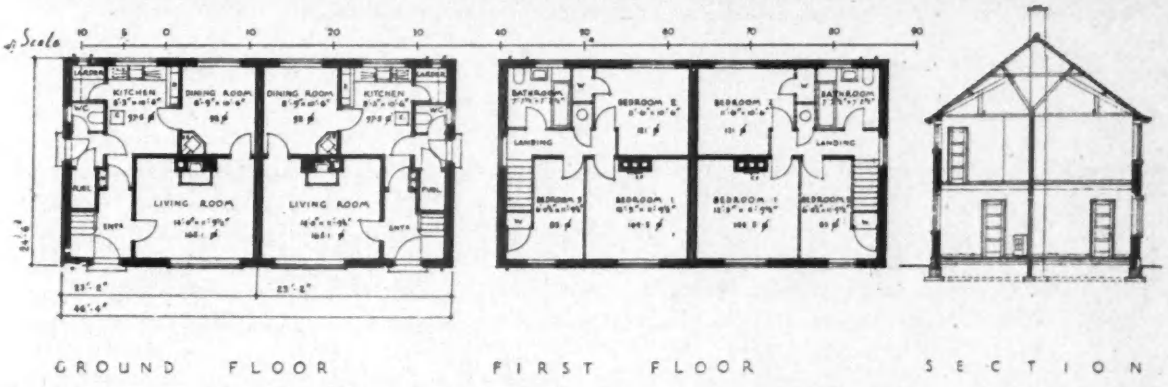


The "Dent" type house, designed for aged persons. (South-east to south-west aspect.)



Eccleshill North Estate, showing the proximity of aged persons' dwellings ("Dent" type, left) to ordinary 3-bedroom ("Nidd A" type) houses. The block on the left is the first of a group of five blocks (20 dwellings) planned around a small green.

The "Nidd" type. Road elevation (south).



"Nidd A" type, designed for south-east to south-west aspect.

from by-products of the Corporation Sewage Department and are proving satisfactory. Windows are generally standard types of metal windows in wood frames. Fencing generally will be of cleft-chestnut palings. Gutters and down-pipes are in asbestos. The earlier houses to be built have wooden ground floors, but it has been found necessary, owing to timber shortage, to adopt concrete floors at ground level finished off with asphalt.

The external painting has been carefully considered to produce a unified effect rather than an indiscriminate changing to produce variety. Colour-washed houses are grouped together, followed with a group of houses in facing bricks.

At corners, screen walls have been provided to give an architectural link at road changes and to supply a certain amount of privacy to the rear gardens. In between the houses the stores have been sited with the same object in view.

INTERNAL ARRANGEMENTS.—The internal fittings of all types are similar. External wastes have not been provided but are carried down internally in a small duct to discharge into back inlet gullies. By this means the annual freezing up of wastes discharging into rainwater heads is avoided. Insulation against heat losses is being provided by means of a glass-silk quilting laid on the first-floor ceiling joists. All living-room fireplaces are of the open type burning smokeless fuel, fitted with gas burners.

Hot water is provided by two methods. When there is a working kitchen only, then there is a back boiler to the living-room fireplace. When there is a dining kitchen, the hot water is provided by an independent boiler in the room or by a closed stove with boiler. When small dining-rooms exist, gas fires are provided, and gas fires are also provided in the best bedroom of each house. All types have been provided with linen cupboards containing the hot-water cylinder.

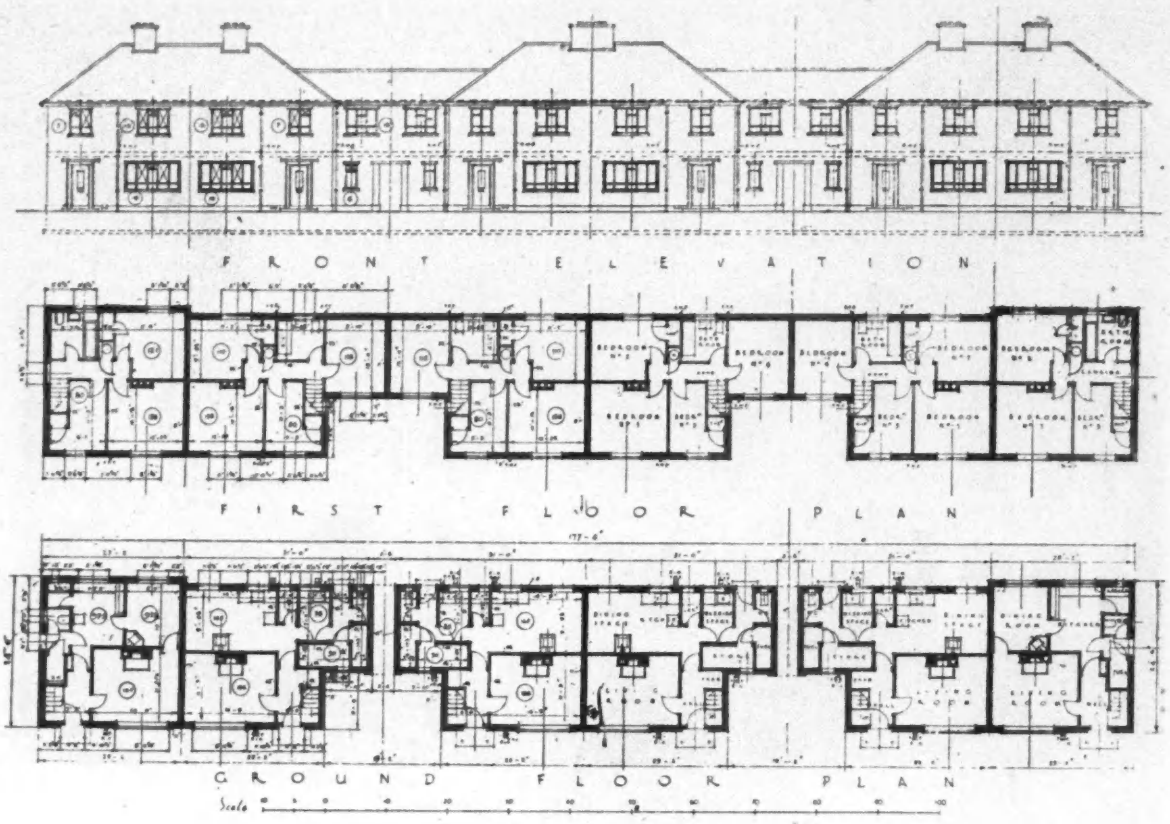
Built-in wardrobes have been put in each bedroom, and the kitchens have been fitted with dressers, combined with the draining board and sink unit. Cooking is by gas or electricity, and wash-boilers, either gas or electric, are also being provided.

There is an adequate electrical installation in each house. As an example, the typical three-bedroom house contains 12 lighting points, of which four are two-way operated, and seven plugs for power, wireless, etc. An electric point has been taken to the cylinder cupboard and the cylinder bossed for future immersion heaters.

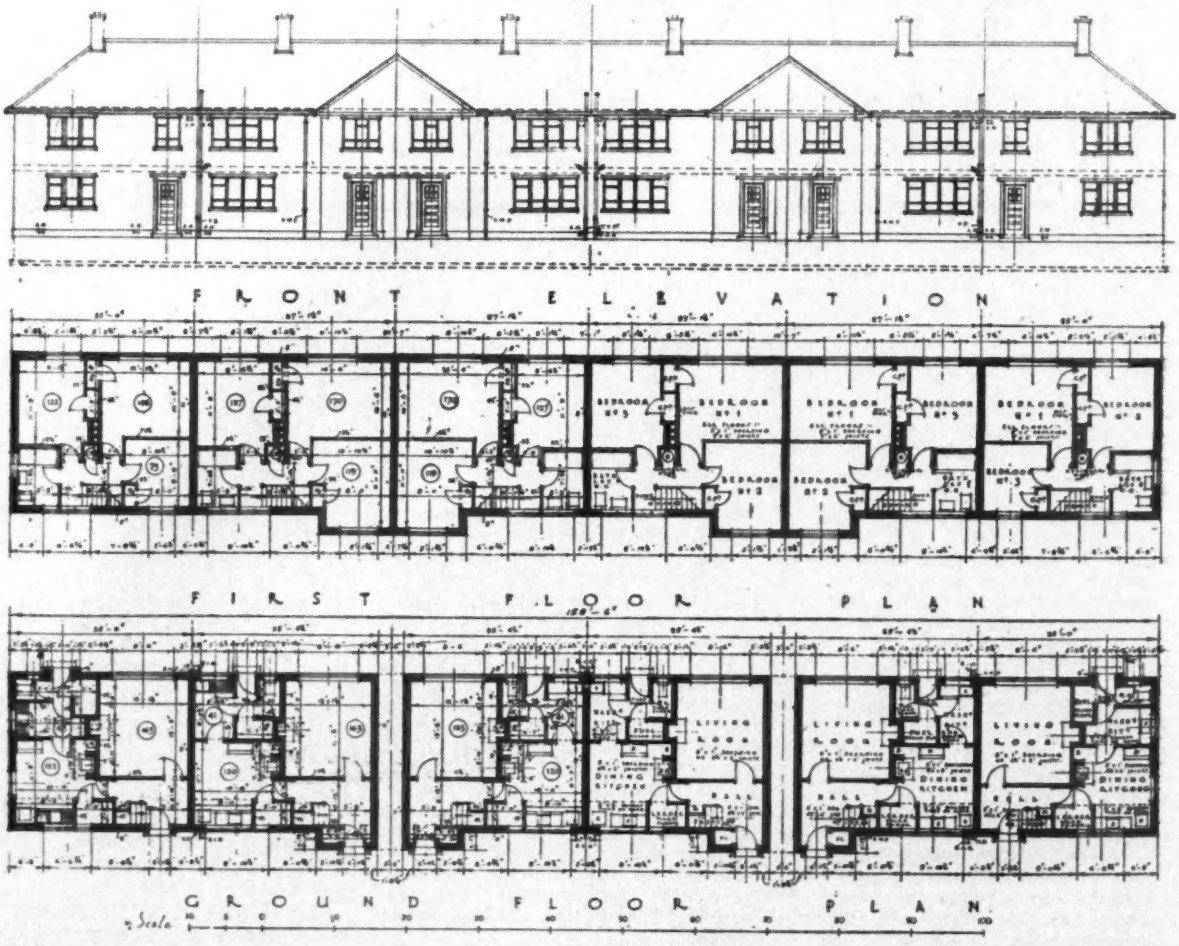
Progress on these houses has been slower than was anticipated owing to the shortage of labour and materials. At present some 460 men are employed on these sites for the 1,005 houses, and 550 has been the maximum number yet reached in any one week.

The contracts for the houses have been arranged as follows:—

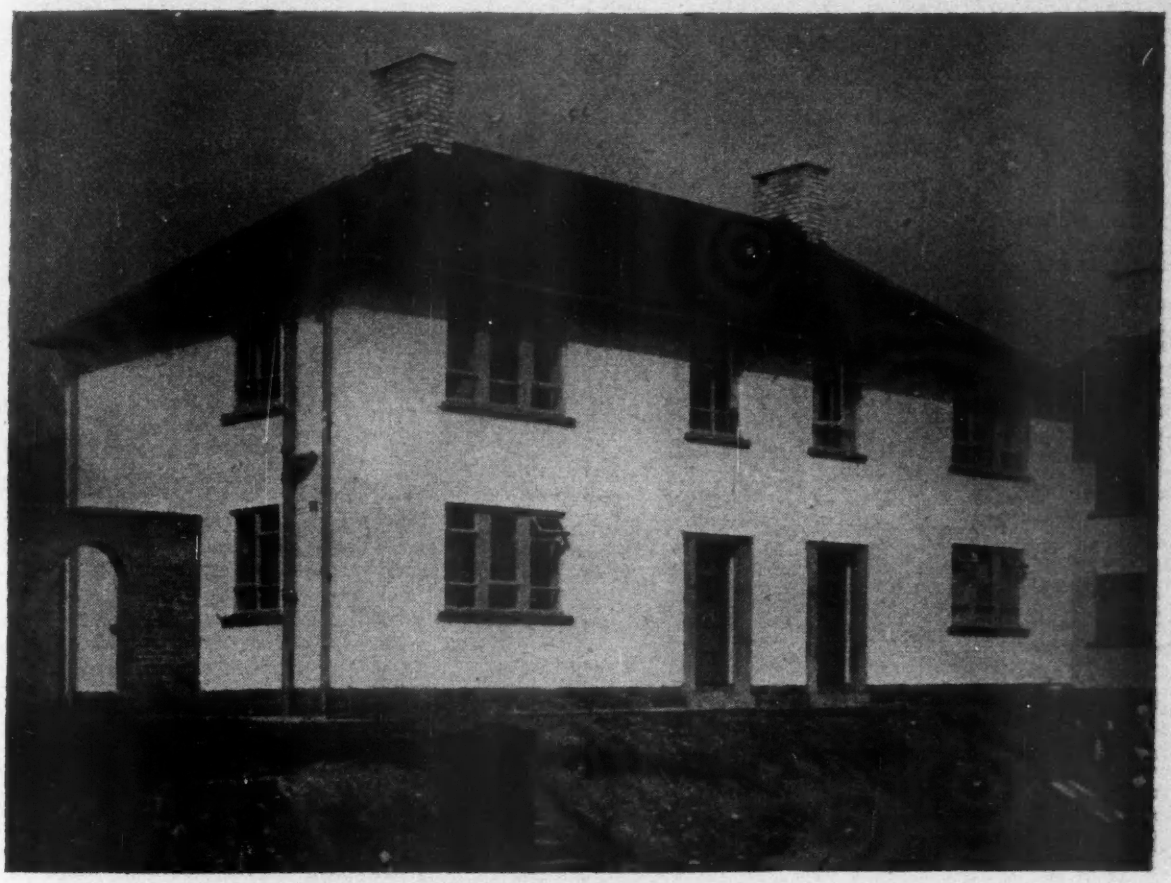
Birksland-street, J. H. Pitchers & Son (6), Smith & Blakeney, Ltd. (50); *Buttershaw*, City Engineer and Surveyor (direct labour) (96); *Buttershaw*,



Elevation and plans of the "Holme" terrace centre type.



BRADFORD HOUSING: Plans and elevations of combined "Laver" and "Laver A" 6-block terrace-type houses.

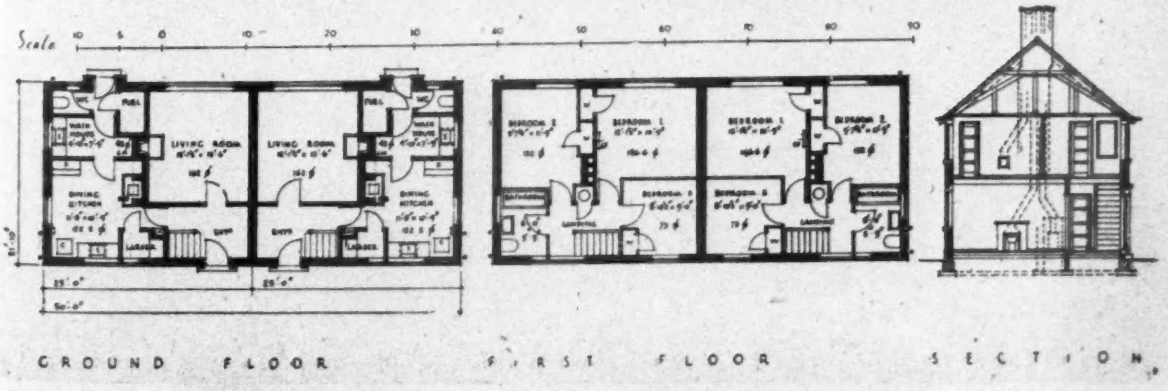


The "Laver" type. Road elevation (north-east to north-west).

Soaper-lane, R. J. Patchett, Ltd. (12); *Canterbury-avenue,* J. H. Pitchers & Son (2), L. & W. Morrell, Ltd. (25); *Clayton,* Apprenticeship Scheme (8), L. & W. Morrell, Ltd. (104), A. Shepherd & Sons, Ltd. (30), R. J. Patchett, Ltd. (26); *Eccleshill North,* L. & W. Morrell, Ltd. (76), E. A. Gadie, Ltd. (48), L. & W. Morrell, Ltd. (140), F. P. Leach & Sons, Ltd. (20), L. & W. Morrell, Ltd. (76/378), Mosleys (Public Works Contractors), Ltd (14), J. C. Harrison (16); *Eccleshill South,* M. Harrison & Co., Ltd. (B.I.S.F.) (50), L. & W. Morrell, Ltd. (198); *Thornton,* Apprenticeship Scheme (4), E. A. Gadie, Ltd. (4).

The houses and estate layouts were designed by the City Architect, Mr. J. T. Castle, A.R.I.B.A., A.M.T.P.I., and he wishes to express his indebtedness to all members of his staff who have worked on the schemes.

The "Laver" type. Garden elevation (south to west).



The "Laver" type house, designed for south-east to south-west aspect.

COMPETITION

FOR MISSING NAVAL PERSONNEL, LIVERPOOL

THE result of the competition for the proposed Memorial at Liverpool to the Missing of the Naval Auxiliary Personnel, together with the Report of the assessor, Mr. Edward Maufe, R.A., F.R.I.B.A., and illustrations of the designs placed first and second, was given in our last week's issue.

A perspective of the winning design, submitted by Mr. Stanley H. Smith, A.R.I.B.A., and Mr. Charles Blythin, F.R.I.B.A., is given on this page.

On the following page we give the drawings of the design submitted by Mr. H. St. John Harrison, F.R.I.B.A., which was placed third. Mr. Harrison's suggested layout of the garden was recommended by the Assessor to the local authority.

MR. STANLEY H. SMITH, A.R.I.B.A., and MR. CHARLES BLYTHIN, F.R.I.B.A., whose design was placed first in the competition for the Missing Naval Personnel Memorial, Liverpool.

THE WINNERS' REPORT

Following are extracts from the winners' report:—

It was decided to use a column of simple design for the main feature of the scheme. The base has been designed to cause as little obstruction as possible on the promenade, at the same time providing adequate space for 1,200 names required.

Corbelling out to within the permitted 2 ft. 6 in. has been provided which allows access round the memorial column.

Silvered glass lenses are incorporated at the top of column, to symbolise a lighthouse lantern.

The following inscription surmounted by the Naval crest is to be cut in the lower portion of the column. "In memory of the Naval Auxiliary Forces reported missing in the Second World War, 1939-1945." The feature at the base of column has a sea shell ornament incorporated.

The orientation of the memorial has made it possible for an appropriate mariner's compass to be included in the paving of the memorial.

In placing the panels, consideration was given to all names being easily discernible. To prevent undue collection of dirt and staining of stonework, the name panels have been protected from the weather by placing them in a recess.

The column is in reinforced concrete covered with Portland stone, and the walls are reinforced concrete with 4-in. Portland stone facing slabs secured to walls with bronze cramps. The mullions between name panels are also in Portland stone and fixed as for wall slabs.

Floor and steps are in reinforced concrete with brown York stone or other

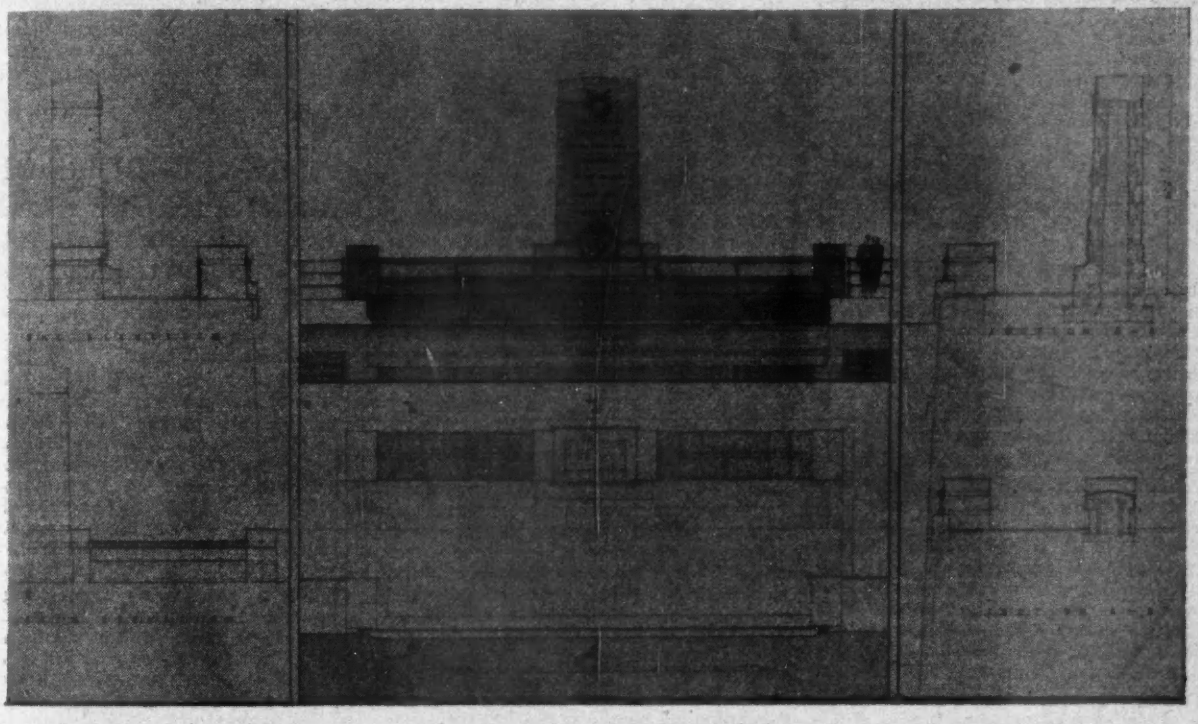
COMPETITION: MISSING NAVAL PERSONNEL MEMORIAL, LIVERPOOL. Perspective of the Winning Design.

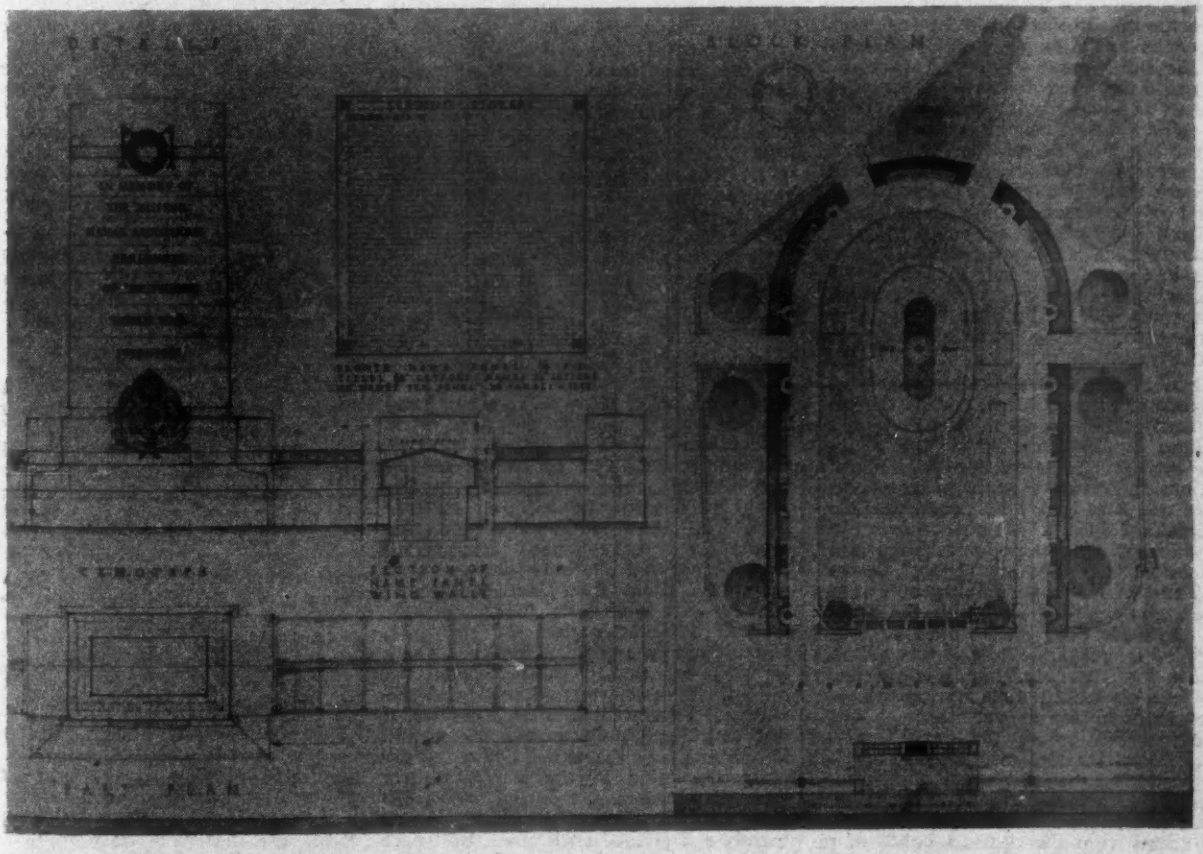
approved paving and the railings are of bronze. Name panels are in cast bronze with raised letters which are to be ¾ in. high, and "V" incised.

MR. H. ST. JOHN HARRISON'S report is as follows: The design is in the form of a cenotaph with low wing walls in support bearing bronze name tablets. The composition faces the river, and a low parapet with bronze rail forms a feature on the river wall, without impeding the view of the memorial from vessels and craft.

Sculpture has to be omitted on the grounds of economy, and stone carving has been reduced to a minimum. The badge of the Royal Navy in bas-relief is the focal point of the design.

The foundations are to be in Portland cement concrete, reinforced as required. The cenotaph, wing walls and piers will be faced with Darley Dale stone on hard brick backing, bonded together. The stonework will be finely tooled at the quarry. The name panels are to be in bronze or a metal alloy as available. Approximate estimate of cost is £5,000.





COMPETITION: MISSING NAVAL PERSONNEL MEMORIAL, LIVERPOOL

DESIGN PLACED THIRD: BY H. ST. JOHN HARRISON, F.R.I.B.A.

"THE ART OF ENCLOSING SPACE"

ARCHITECTURAL ASSOCIATION STUDENTS' EVENING

A MEETING arranged with the Students' Committee was held at the Architectural Association on February 25. MR. PETER BOSANQUET, Chairman of the Students' Committee, presided.

In the course of a talk on "Architecture—the Art of Enclosing Space," MR. ERNO GOLDFINGER, D.P.L.G., said that all enclosed space was not architecture: The architect enclosed space in such a way that his work touched the emotions. The effect might be pleasant, inspiring, or otherwise. Architecture differed from some of the other arts in that it had to fulfil a specific social function: space had to be enclosed so that people might have homes to live in and factories, offices, theatres, cinemas and buildings for a variety of other purposes. But while thus enclosing space with some such object in view, the architect enclosed it in such a way as to make it thrilling—if he was an artist. His building affected the sub-conscious. One need not be conscious of being in a beautiful room, but surroundings at such a time affected the emotions.

The elements of the enclosed space were floor, walls and ceiling. The size and shape of the enclosed space, and the size, shape and matter of the floor, walls and ceiling were all the architect had to use. He must use these elements properly, producing size, shape, scale and proportion. Scale and proportion were intimately linked, e.g., if a balustrade was 2 ft. 6 in. high instead of the customary 3 ft. 6 in., the building would look larger.

During the discussion which followed MR. GARLAND GRYLLE said Mr. Goldfinger had made them all do a little bit of thinking. Did he think that architects gave too much attention to the functional approach to building? He had laid stress on the sub-conscious effect of space, but it could be used to have a conscious effect as well. It could be used to direct attention in various directions. A good example of this was the entrance of a Gothic cathedral from the western end. Attention was immediately fixed on the screen or high altar. Colour as well as space had an effect. He had recently seen an admirable example of this in the entrance hall to a flat. The nearer space was red and that farther away was blue. The effect was as if the further walls were not quite so near as actually they were.

MR. ANDREW DERBYSHIRE said it was important for architects, and particularly student architects, to think about architecture in the terms which the title of the present discussion implied. The relationship between space and architecture was a subject which could be intellectualised into a shambles of rarefied mysticism. In that popular spatial bible, Moholy Nagy's "New Vision," towards the end of the book many people found themselves getting lost with the author in a maze of space modulars and woolly language. While it was quite in order for a sculptor like Moholy Nagy to lose himself in metaphysics, this was not in order for an architect. A complete realisation of the significance of space as a creative medium was of vital importance to contemporary architecture. Sculpture, painting, music, science and, in a less degree, literature, had all been liberated from the classical bonds of representationalism, perspective, tonality and the idea of a continuous nature of time. But not so architecture. Aesthetically it was still considered largely as the static organisation of volumes, solids and planes, and still judged by the fixed perspective of the photograph and the small scale model. The study of the architectural values of space would not be a cure-all, but it might lead in the right direction. Architecturally considered space was at the same time a sensation and a physically measurable entity—an affective state induced in the observer by a multitude of perceptions. Space could be seen, heard, touched, and above all moved about in, each separate sensation combining with all the rest and evoking a host of associated memory sensations. The words we used illustrated the complexity of the individual reaction to spatial sensations: cosiness, bleakness, bareness, freedom and imprisonment were all spatial qualities, and all relevant to architecture. The spatial sensation was the fundamental architectural sensation.

MR. JOHN SUMMERSON said he did not like to hear the arts dismissed as merely exciting and amusing. Architects had created great buildings without using modulars, and it was a fatal mistake when one found an architect using a modular to apply it to one's own buildings. Whether layman or architect, the room one was in had an effect on one, and it was the business of the architect to tell what its merits and defects were. The vital thing to every architect was experience of being in buildings and interpreting the feelings that people had about those buildings into practical criticism.

Psychological Significance of Space.

THE CHAIRMAN said they were all agreed that it was profoundly important for the architect to cultivate an awareness of the psychological significance of the space he enclosed. There was a range of emotions closely paralleled by the degree of enclosure a man was undergoing. A parachutist jumped and for a few seconds experienced total unenclosure. When the parachute opened some small enclosure was established over his head, and as the ground flew up to meet him he was conscious of the plane of the ground. The ground was the most important plane of enclosure; for one thing it extended in all directions, and for another its distance from the eyes of a man walking on it was constant. We judged scale by the height of our eyes above the ground. The parachutist having landed, walked across the ground and came to a wall. This was a vertical plane of enclosure. Such planes met in lines, and immediately two of them met you had direction; and the parachutist followed the direction he thus obtained into the town. Here the sense of direction was enormously enhanced because all lines disappeared into a perspective ahead of him. These lines increasingly enclosed space and thus the parachutist realised different degrees of enclosure, and ultimately entered a building where he was enclosed by walls, floor and ceiling. Here he experienced full enclosure. Disregarding shape and size, if one considered only rectangular planes, if one analysed the variety of space enclosure possible to the architect there were six planes available and twelve different combinations of these. Shape was merely a degree of enclosure. But space enclosure was only part of the story. Entering a building without windows one felt claustrophobia. When looking out through windows architecture might be regarded as a conflict between space enclosure and penetration. Penetration might be achieved either by a hole in the wall, such as a door or window, or by disjoined planes. These produced a different spatial emotion from that caused by the hole in the wall. A little doorway in a great wall had an uninviting appearance, but in the case of the disjoined planes the light through the opening invited you to go on. The disjoined planes could be used not only horizontally, but also in elevation, and Le Corbusier and Frank Lloyd Wright had both used them each in his own manner.

PLANNING DEVELOPMENTS IN GERMANY

MR. NOTT ON POST-WAR WORK

THE energy of the German people is such that only two days after VE Day a group of planners sat down to replan Berlin and formulated the Zehlendorfer Plan.

Details of this plan, together with other replanning schemes (including that prepared by the present City Architect, which was illustrated in *The Builder* of January 2), were given by MR. ROBERT NOTT in his lecture on "Planning Developments in Germany" at the Town and Country Planning Association's headquarters in London. The following is a summary of Mr. Nott's remarks:

While a great deal of planning has been done in Germany, it is unrealistic to talk of planning without saying something of the background of all developments in that country, which is one of immense physical destruction and of political uncertainty. One quarter of the whole of Berlin has been destroyed. This represents the destruction of homes and working places for over a million people. Virtually no new building has been started. In the British sector of Berlin, for example, total repairs are one-third of the lightly damaged houses, and those, owing to shortage of material, have been repaired very indifferently. In this sector 35 prefabricated houses have been built, and 500 Nissen huts. Not only is there little rebuilding, but also very little clearance of debris. Even in streets as important as the Wilhelmstrasse and the Friedrichstrasse, the streets and pavements have not been completely cleared, and the Hohestrasse, of Cologne, the local Piccadilly, is still impassable by motor-car.

With regard to the political background, it requires no imagination to realise that the breakdown of the Four-Power Conference represents the deferment of hundreds of minor decisions which makes it almost impossible to implement any project in Germany to-day, or even to plan with the assurance that the general lines of one's plan will fall in with whatever policy is dictated by the occupying power. This is particularly true in Berlin, where the city has been divided into four sectors, each administered by a separate power.

The Zehlendorfer Plan.

This plan has four objects: (i) To preserve what is left of Berlin. (ii) To solve the traffic problem as the crux of the whole matter. (iii) So to draw the plan that it could be implemented stage by stage, and that each stage should be a separate entity. (iv) In view of the time lag which must inevitably occur, to make the plan elastic and capable of modification.

Berlin began as a village which grew up at the crossing of roads East to West and North to South across Europe. Of these two roads the planners say the East to West is the more important, and that they have made the axis of their plan. The plan has five parts, which include reorganisation of transport facilities, the provision of ring roads, and the laying out of green spaces within 15 minutes' walk of any dwelling.

The Hermsdorfer Plan.

This plan, which is principally concerned with moving both industry and population out from the centre of the city, provides for the building of one vast railway station to cater for the whole needs of the city, the area around the station to be given up to official and semi-official buildings. This station is to be connected with the autobahn system by motor roads, including a ring road around the inner city, and one outer ring. It is, however, in the industrial and residential zoning that the most remarkable changes are proposed. The plan provides for an industrial area in the form of a belt of factories and industrial buildings with a diameter of seven miles around the city. The factory ring is to be flanked on the inside and outside by a ring road and on the outside by a double railway line, at basement level, to facilitate the loading and unloading of goods. The population within this ring is to be reduced from a pre-war population of 2½ million to one million, and accommodation for these is to be found by the building of four concentric rings of "neighbourhood units." These rings are to comprise in all 200 "neighbourhood units" with 800,000 homes for three million people. The majority of these are to be five-roomed single-family homes, but 10 per cent. are to be six- and eight-roomed dwellings. Outside this area existing industrial areas, such as around Siemensdorf, will remain, and these areas will be connected by a ring railway. Outside this again is to be an area for garden villages with market gardens and smallholdings.

The New Plan.

This plan, prepared by the present City Architect, Herr Bonatz, is a merging into one of previous plans. The architect suggests that it is absurd to move Berlin from its present site, as has been suggested, and starts his planning from the three main streets, Unter den Linden, Friedrichstrasse and the Leipsigerstrasse, and to these streets he drives through a parallel street on either side. Around this area, the inner city, he then builds a ring road as in the Hermsdorfer plan, which virtually makes the inner city a close, free from all through-traffic. The railway system he leaves more or less as it is, but provides for three ring roads around the outside of the city, the outermost to be only a second-class road. He is concerned with open spaces and what he calls stadtlandschaft ("urban landscaping"). He leaves many open spaces in the residential districts and the outer districts, and also allows these open spaces to penetrate into the built-up areas. The quadrangle and the square, grassed and planted, are used in his rebuilding schemes for the inner city. One interesting idea is the roofing over of parts of certain of the main streets to form pedestrian shopping precincts.

The plan is not revolutionary and, in fact, some people will regard the architecture of his rebuilding schemes as outdated, but it is a plan which is possible of implementation, and is put forward as such.

The Ruhr.

The Ruhr, which is the most important industrial area of Germany, was the most built-up area, and therefore relatively the most bombed. Here all planning problems are greatly magnified by the congestion which has grown up in the past century.

Coal is more important than even the rebuilding of the destroyed Krupp Works, and therefore the principal problem is the rebuilding of miners' homes. They are very realistic in the Ruhr and have reduced their needs for rebuilding not to millions of bricks and tons of cement, but to the tons of coal needed to make them. Here again political uncertainty must inevitably defer any large-scale replanning. Is the Ruhr to be internationally controlled, and, if so, by what powers? What industries, if any, are to be demolished? Is Krupps Works to be rebuilt, and if so, in its entirety or in part? Until problems such as these are solved, no replanning is possible.

THE IDEAL HOME EXHIBITION

SILVER JUBILEE YEAR

ONCE again the "Daily Mail" Ideal Home Exhibition fills the whole of Olympia. This year it celebrates its silver jubilee, and the show is well up to the standard of its predecessors. It has had the honour of a visit by Their Majesties the King and Queen; several Government Departments have contributed outstanding features; the War Office has a working exhibit in the form of a travelling bakery where a thousand loaves are baked daily for the troops of the London District; there is the usual host of stands with displays of all sorts, set out in accordance with an ordered architectural scheme; and, as in former years, there are the gardens. The architect to the exhibition is Mr. Douglas L. Dick, F.R.I.B.A.

The promoters are well experienced in the job, and, first and foremost, they realise that the exhibition has got to interest the general public. That is why the show is very different from the trade exhibitions at Olympia. All the world and his wife have ever to be caught by some striking novelties. Year after year these make their appearance. Only the gardens—this year "The Gardens of Music"—remain the same. The translation of that concrete waste in the Annexe into an oasis of spring blossom in flowers and shrubs is indeed a yearly transformation that never fails to charm.

This year a giant tree trunk, florally decked, occupies the centre of the Grand Hall; on the first floor of the Empire Hall Nelson looks down from the top of his column, allowing visitors a close-up of Baily's 17-ft. statue at a proximity hitherto enjoyed only by steeplejacks and pigeons; and "The Pageant of the Hours" presents a collection of clocks and watches devised throughout the ages, and brought up to date by the "Sectric" electric clocks, which keep exact time for visitors in every part of the exhibition.

A score of famous West End shop windows will attract every woman visitor seeking the "new look"; needlewomen will be drawn to the replica of the Bayeux Tapestry, 231 ft. long, which has taken Mrs. Maud Geare seventeen years to accomplish; boys will be fascinated by the strange fish in the Seven Seas Aquarium; while their fathers may perhaps prefer to peer through peep-holes into the glowing interior of a blast furnace that has been reconstructed at Olympia by the British Iron and Steel Federation.

Those, however, who are more particularly concerned with house-building will want especially to see the full-scale houses in the National Hall. This year there are six of them, presented by the Ministry of Health. The two which are likely to attract most attention are the two-storey aluminium house and the pair of Cornish unit houses built of slabs made from the residue of the china clay industry. Mr. Edgar Beresford, F.R.I.B.A., has designed the latter and has made a very attractive job of the exterior, while the interior furnishing—so often marred by commercial vulgarity in specimen houses of this kind—has been admirably done under the auspices of the Council of Industrial Design by two young designers, Mrs. R. Nagelschmidt, A.R.I.B.A., and Miss Margaret Millard.

The display of the British Gas Council this year is such that while being somewhat unique in character and attractive to the eye it remains essentially a practical exhibition. It consists of a pavilion designed in fairground style by Mr. James Gardner, O.B.E., R.D.I., F.S.I.A. The interior contains a tableau entitled "The Seven Ages of Woman," which demonstrates the usefulness of gas in the daily life of a woman from babyhood to old age, while the exterior is used for the display of the latest gas appliances. In addition the full range of Ascot instantaneous gas heaters is on show in the Household Services section in the Grand Hall.

Perhaps the most attractive feature of this year's exhibition is the fact that approximately 70 per cent. of the products displayed are available for immediate delivery. The exhibition is open from 9.30 a.m. to 9.30 p.m. each weekday until Thursday, March 25 (admission 2s. 9d., children 1s. 9d.), and a positive boon has been provided by the Nestlé Playland, where youngsters from three to nine years of age may stay up to three hours in the care of a competent trained staff while their parents see the show.

QUANTITY SURVEYOR'S FEES

IN connection with a case heard at Bow County Court recently in which Mr. George Fuller, quantity surveyor, of Wood Green, claimed fees for work done in connection with war damage repairs (reported in our issue for February 13) and in which the defendant's counsel made the suggestion that the plaintiff had committed a breach of professional etiquette by sending an estimate of the cost to a builder, Mr. Fuller now writes: "The builder referred to in the court proceedings had agreed to carry out war damage repairs under R.O.D.1 and to apply also for the Civil Building Licence; I was instructed to make a physical survey of the war damage and to prepare a specification together with an approximate estimate of cost. It is quite obvious that an estimate was necessary in order to be able to apply to the authority for a Civil Building Licence in a definite sum of money. In view of the fact that it was not a competition, nor was it the intention to award the builder a fixed lump sum contract, but was just an ordinary cost-plus-fee agreement, there can be no question of any breach of professional etiquette because an estimate of cost was submitted."

"PROGRESS REPORT ON BUILDING"

A B.B.C. BROADCAST

PROGRESS Report No. 6 (broadcast on Tuesday, Wednesday and Friday of last week by the B.B.C.) dealt with the building industry. From the script, which was edited and produced by W. Farquharson Small and for which the research was done by Joe Burroughs, we take the following extracts:—

JOCK MELDRUM (a carpenter on the new Poplar Power Station): We could do with a lot more men here. That's been the whole trouble. We get older men and they don't mind it so much, but the younger men go elsewhere where they get the same money on cleaner work. If we had a bonus system that would encourage the men to stick into it, but we can't have that until we get more timber. And the only reason we can't get the timber is because of red tape.

JOHN SLATER (narrator): Well, there really is more timber in the country. Stocks at present are approaching something like pre-war levels. MONTAGU MEYER, a timber importer, says: There is plenty of timber in the country, but the use of it is restricted to assist the production of food and the export of manufactured goods. . . . While builders of houses may be irritated at seeing large quantities of wood all over the country which they are not allowed to buy, they must nevertheless admit that the policy of the Government, which puts food for the people first, must be right.

SLATER: It's important to bear in mind that timber is required for many purposes besides building. The export drive itself needs timber and men—and the building industry may have to sacrifice both. Certainly a successful use of substitute material such as prestressed concrete for houses and factories is being made—and in any case we've got sufficient timber for the 1948 housing programme, but there won't be sufficient timber allocated to building to keep all the carpenters and joiners in work—and that surplus labour is eagerly awaited in other industries. . . . In an effort to bring down building costs by shortening the time it takes to build a house, 60 per cent. of the building workers are to be concentrated on finishing 210,000 houses by next June. After that the position is uncertain.

Meanwhile, the question of repairs to existing houses is pressing, but to conserve material for new houses licences for repairs are being cut down. Thousands of small builders who specialise in repairs and whose men are not readily transferable to other types of building work are wondering what the future has in store for them.

ARTHUR DAVIES (a building repairer): The Ministry may also hope by this measure to squeeze back into permanent building many of the craftsmen who have set up as master builders since the war, and also to break the black market in building work. But it won't happen that way. They are creating a position where an honest man will be out of business or stay in by black market work. And they are making the black market more lucrative — it always flourishes on scarcity.

SLATER: Concentration on completion of this year's programme not only upsets the small building repairer, but it could unbalance the whole labour force of the industry if the starting end of the business isn't kept in line with the finishing end. According to present plans, completion must exceed fresh starts by 6,500 houses a month. Leaders of the industry believe that this will result in the loss of men who work on the first stages of construction, especially labourers, who are already scarce. The outlook for many building workers is not wholly reassuring, and it may be that uncertainty is a factor in that lower output.

LEO MCGREE (Trade Union Secretary): Even with the greatest will in the world, how can we expect increased production if we cannot be sure of supplies of materials? Everyone connected with the industry is aware that when we have plenty of materials and work in front of building trade workers production always increases. To-day, increased production, speedy completion of building, can only mean a race to the Employment Exchange.

ALEX MCCRINDLE (from Merseyside): In spite of uncertainty, where conditions and rewards are good, men have been working well. I spoke to a builder who is working an incentive scheme.

R. O. LLOYD: On our contracts we have men earning bonus up to £3 a week and at the same time reducing the cost of building houses. There are many who would like an overall bonus scheme, but I contend the maximum effort will not be forthcoming as the target would become too impersonal.

HORACE COMBEN (London builder): In the last few months output has increased by about a third following the introduction of our new bonus incentive, which, of course, is paid to the workmen. Things are speeding up well. But now the Government comes out with its new capital investment cut, which means that we shall have to dismiss our men, and housing progress will be halved again. I reckon in the industry as a whole a quarter of a million men will be displaced.

SLATER: Whether Mr. Comben's estimate of the scale of unemployment looming ahead is exaggerated or not, it is reasonably certain that there is a danger of some unemployment, resulting from the Government's cuts in capital expenditure; indeed, in the summary of that White Paper produced by the National Federation of Building Trades Operatives it is stated that: "Taking all things into consideration, the total permanent core of unemployment will not fall below 10 per cent. of the insured personnel." On that point building employers have recorded their agreement. At the same time it must be said that in two outstanding cases, at Plymouth and Liverpool, where unemployment has already occurred—work which had been suspended was recommenced to absorb the men. Controls can be relaxed and readjusted where necessary.

SIR LANCELOT KEAY, Liverpool's Housing Director: It is not easy to take an optimistic view of the future. We dislike the imposition of controls, but they are necessary. By the centralisation of control we are destroying initiative and reducing the number of those capable of accepting responsibility. Those nearest the ring of the trowel are best experienced in all the intricacies of the building industry. I have little doubt that if the industry could be left alone it would work out its own salvation and avoid the peaks and falls with which it is all too familiar. We are concentrating on the completion of houses without starting any new ones. The time will come when the number completed monthly will shock those who have waited so long for a new home. The problem of the industry which it must solve for itself is how to reduce costs and speed production.

High costs are due to higher wages, a guaranteed week, increased cost of materials, and lower rate of production. A house which cost £447 before the war and was built in 26 weeks now costs £1,230 and takes 52 weeks to build.

GRAHAM HUTTON (summing-up): What does our Progress Report on building amount to? There have been achievements, but at a huge cost: new uses of brick, concrete, glass brick, steel, aluminium, and great economy in the use of scarce timber. Prefabrication and unit-fabrication have made great strides. Britain's post-war building achievements are the biggest and probably the boldest in Europe. By the end of the past year we'd built roughly 200,000 new permanent homes since the war, and 140,000 so-called temporary houses. Homes for almost a million people. Most of these have been built by Government authorities on public funds, in order to let them to people who can't buy. But the work has been completed slowly, and prices of all things going into a house have soared. Far from these houses having been rushed up, they've just grown, gradually. The workers' hours are shorter; the incentive pay is higher; and there is now the reassurance to the worker of the guaranteed minimum week—you remember hearing about that. Add these benefits—desirable as they are—to the rocketing costs of metals, timber, porcelain, steel, and so on—and you realise why the same pre-war house now costs three times what it did, and takes twice as long to build.

Then there's the Government's cut last November in the new investment and building programmes. Housing is not so severely cut at present; but other building is, and no one knows what is to happen after June—and this is the end of February. Britain needs 5,000,000 new homes in the next ten years: half-a-million a year on the average; but last year's uncut total was only 140,000—less than one-third of that average yearly requirement. Why a cut, then?

Because we need too much at once in this impoverished country now—too many kinds of new buildings, and more exports, and better coalmines, railways, ships, productive machinery, and so on—all competing for limited manpower and materials. We can't do everything at once. As a country, we're being expected to build a better Britain, just when we don't know how long we can go on paying for the materials—and the food to keep our workers on the job. So we may have to "make do and mend" on some forms of building, while concentrating on buildings which will at once raise our manufacturing or exporting efficiency, or raise the amount of food we can grow at home—for instance, houses for miners, or farm labourers: new factories for the export trades. The Government alone can decide the priority between the following: schools, factories, hospitals, electricity generating stations, houses, farm buildings and warehouses. That's why the building industry thinks the Government should make a new statement of detailed building targets for the various classes of construction over, say, the next two years—if more crises don't intervene! Only then will builders, contractors, the workers and the makers of all the components know what to plan for. All we can afford—within our shrinking resources—we must do; but we must do it more cheaply and better than we've done so far. And we must do it much faster!

SURVEY AND DEVELOPMENT PLANS

PAPER READ AT TOWN PLANNING INSTITUTE

A DEFINITION of the duties of bodies connected with town planning formed the basis of a paper on "Survey and the Development Plan Within Three Years," read by MR. KENNETH O. MALE, F.R.I.C.S., A.M.I.Mun.E., M.T.P.I., at a general meeting of the Town Planning Institute at the Livingstone Hall, Westminster, S.W.1, on February 19.

Mr. Male assured his audience that the title of his paper did not imply that he was to present a ready-made formula which would guarantee the production of a development plan within three years. Nevertheless, he saw no difficulty in the completion of a development plan within that period in areas where extensive survey work had produced advisory plans and reports, provided the Minister would be prepared to accept such plans as a preliminary indication of suggested policy.

In the speaker's opinion, the central government should be responsible for national policy, a joint advisory committee for regional outline planning standards and a co-ordination of development plans, while the local planning authority should be responsible for the production of those plans.

The national policy of the Government should be disseminated through its regional officers and should include employment policy, agricultural policy, industrial policy, national road systems, national parks, airports and airfields, forestry programmes and mineral workings.

The joint advisory committee should prepare a regional outline analysing the industrial, economic and social problems of the region and proposing a broad solution of such problems based upon national policy. It might also prepare standards for urban planning within wide limits in order that a common formula might be available to all local planning authorities. It should not, however, in any way supersede the local planning authority in the preparation of a plan. In many regions local authorities had already evolved their outline, and in such cases the advisory committee would consider the problems arising in its implementation.

Two Different Approaches.

The two types of local planning authority would approach the development plans in a somewhat different manner. The county council would first form the framework and then proceed to fill in the details, whereas the county borough would have to embark on fairly detailed plans immediately. It was assumed that the plans would be in two parts; one indicating the main proposals for the future broad use of all the land, and the other giving details of all areas of comprehensive redevelopment and, if sufficiently extensive to warrant it, of undeveloped areas proposed to be acquired compulsorily.

The first part of the development plan should be submitted to the Minister within three years of the appointed day, and would probably include an outline plan of the county to a scale of 2½ in. to the mile, town plans for each urban centre to a scale of 6 in. to the mile, a programme plan to 6-in. scale, and a written statement.

The county plan would show the following particulars: Land to be occupied by the expansion of existing towns and by new towns (the building fence only enclosing these units would be shown), villages selected as major rural centres; principal systems of communication; major schemes for surface mineral workings and surface disposal of waste; proposed development by service departments, statutory undertakings or Government-sponsored projects; and proposals for national parks, regional parks and the preservation of special areas.

The town plan would include the following items: The main road framework; transport systems; the open space system; business and community areas; industrial areas; residential neighbourhoods; secondary schools and higher education proposals and their playing-fields; and such other items under the county plan as were appropriate.

The programme plans would indicate the areas likely to be required within the first ten years for comprehensive development or redevelopment. The written statement would comprise an explanation of the proposals included in the plans and would be supported by statistics proving the relevant proposals in the plan.

The county plan and town plan must be prepared concurrently, the speaker continued. Unfortunately, neither of these could be considered as working drawings and a considerable amount of time would have to be spent on the drafting of 25-in. scale detailed maps of developing areas in order to control current development. These plans would generally relate to complete planning units such as neighbourhoods or central areas.

Regional surveys should be undertaken before the preparation of maps. These would cover population, agriculture, communications, industry, public services, education, amenity, minerals, geology, topography and climate.

The Development Plan.

The next step would be the preparation of the development plan. Having decided for what population the plan should provide, the next task would be to calculate how much land was required to house the population. The speaker referred to a set of standards upon which calculations could be based, which had been drawn up by an advisory planning committee.

The problem of deciding where the population was to be located could be solved by the completion of a questionnaire for each urban centre over 4,000 population. The completion of such a questionnaire would indicate the capacity of each town to accommodate its own population after redevelopment, and the extent to which it could be expanded. To assess the appropriate standard for each part of a town it was obviously necessary to carry out a survey of existing densities. In many small towns the use of one density standard would probably be sufficient, but in the larger towns the need for differing standards dependent upon the density of existing development would be apparent.

The speaker then referred to rural planning. There appeared to be two main principles governing the planning of rural areas, he said. These were the protection of land of agricultural value consistent with a policy of sound planning, and the efficiency of the agricultural industry and the provision of adequate communal services in the rural areas. In considering the future planning of rural areas, it seemed to Mr. Male that four factors were of great importance. These were the size and distribution of villages in relation to the rural population; the size and distribution of market towns; the impact of residential and industrial development on rural areas; and educational provision. The first survey would, therefore, be directed to locating each village, estimating its size, and determining what public services and social amenities were to be provided.

As regarded its size, an approximation could be arrived at by investigating the road system linking outlying farm houses to villages. In addition, the Ministry of Agriculture and Fisheries had recently carried out a survey of farms from which an indication of the sphere of influence of each village could be gained.

We should take into account the number of persons required to maintain the agricultural industry in a healthy state, and assume that in due course an additional population would be attracted back to the land. The regional land utilisation officers of the Ministry of Agriculture and Fisheries were now obtaining estimates of the additional labour required on all farms, and these esimates would be of great value in formulating proposals.

No two counties possessed the same rural structure and, consequently, no universal plan could be adopted. The major problem was the appropriate treatment of the smaller village, having a service area containing fewer than 300 population. A redistribution of farm units might enable one to determine the life of some villages whilst expanding others, but as long as the existing structure continued the means must be provided to give the inhabitants of the smaller villages the opportunity to enjoy as full and varied an existence as possible.

In conclusion, Mr. Male said he was afraid that he should be accused of omitting any reference to certain vital aspects of the development plan. His only defence was that he found it somewhat difficult to describe in half an hour the work which would, he was sure, take every minute of the allotted three years.

Discussion.

In the ensuing discussion MR. G. LONGSTRETH-THOMPSON said he was inclined to think that three years was really a target which would have to be adjusted to suit the skill and capacity of the marksmen and also the marker. However, it was certain that development plans would have to be available as soon as possible, and before the spate of rebuilding and new building got under way, if planning was to be really effective. The accomplishment of this would require the drawing up of a programme of the work and careful organisation of the team which was to carry it out. He went on to say that the survey and development plan were integral parts of a single operation, and it was important to remember that the survey was not an end in itself but was required solely to furnish the information necessary for making the plan. The scope and detail of the survey should be strictly conditioned by this consideration. The methods of obtaining the information and the responsibility for obtaining it required one definite organisation. Broadly speaking, the Ministry of Town and Country Planning should provide information of a national and regional character and the local planning authorities should collect all information of a local character. His conception of the staging of the development plan differed from Mr. Male's in that he proposed

to divide the first stage into two parts. He visualised the first part as the county outline plan, which would be on a sufficiently small scale as to get the whole of the county on the one plan. He felt that Mr. Male's plan was too detailed for an outline plan, but not sufficiently detailed for anything else. He thought the outline should be much more diagrammatic. At the outline stage nobody had surveyed the ground sufficiently to be able to make a really convincing suggestion with regard to the territorial boundary. The second part of the first stage would be the area outline plan, which would indicate the routing of roads, the main open spaces, agricultural areas, and so on. When the area outline plans were properly co-ordinated it would be time to embark on the detailed development plans, and the first county outline plan should be discussed with the Ministry and provisionally agreed with them.

The speaker did not agree with the position Mr. Male had assigned to joint advisory committees, and he noted with surprise that county district councils did not appear in his scheme at all. Joint advisory committees had done good work, but under the new Act their duty should pass to county councils. It would be necessary, however, to have close co-ordination between neighbouring planning authorities, and there might be some scope for joint advisory committees there. County district councils often had very definite ideas as to how their districts should be developed and were perfectly entitled to make those views plain. We did not want a stereotyped plan for the whole of England or even one type of plan for a whole county; we needed as much individuality as we could get into local plans. In his opinion the Ministry, on behalf of the Government, should be responsible for the national and regional policy and general technique; the local planning authorities should interpret policy in terms of development plans and the county district councils should carry out the plans by their own development and have charge of development control.

MR. E. H. FORD, M.I.Mun.E., City Engineer of Coventry, said the lack of planning schemes before the war was largely due to the fact that councils were afraid of the financial aspects of the schemes, but it seemed that this feeling had now disappeared. He emphasised the need for planners to get to know their areas intimately and also to commence their work in collaboration with parish councils who knew the districts well.

MR. O. A. RADLEY suggested that if there were only one or two county boroughs in an area a joint advisory committee might not be needed.

MR. E. H. DOUBLEDAY made a plea for the smaller villages and deplored the fact that the larger ones were selected too often as major rural centres. He added that if planners had to wait for the co-ordination of the various Government departments' requirements to be accomplished the three years would undoubtedly have to be extended.

The importance of making a land-value survey was stressed by MR. R. E. FOSTER, who maintained that planners were going to create land values in a much more positive way than had been done in the past.

Replying to the discussion, MR. MALE said the advisory committees he had been connected with had only met about once every six months to confirm what had been done by the technical committee. He did not say that all the conflicting interests in an area containing several county boroughs could be co-ordinated in a joint advisory committee. He was in doubt as to whether the system of choosing major villages and leaving the smaller ones entirely alone would solve the rural planning problem. It was his belief that planners would have to compel educational authorities to revise their development plans before they could proceed with their own.

STRUCTURAL RESEARCH AT B.R.S.

SOME CURRENT INVESTIGATIONS

A REVIEW of some of the current investigations of interest to the structural engineer which are being carried out at the present time at the Building Research Station was given by DR. F. G. THOMAS, Ph.D., M.I.Struct.E., A.M.I.C.E., when he addressed the Institution of Structural Engineers on February 12. In the course of his remarks the speaker said:

Since the war, fundamental research work on the strength of bridges has been recommenced, with particular regard to the possibility of evolving a design procedure which would lead to greater economy of material as a result of more accurate knowledge of the behaviour of bridges under load.

The main research work now in hand at the Station in connection with bridges concerns modern steel and concrete bridge deck systems. Three types are being studied:

(*a*) A series of steel joists supporting a reinforced concrete slab;

(*b*) As (*a*) except that the joists are encased in concrete and concrete jack-arches span between the joists to support the slab; and

(*c*) A filler joist system, with the steel joists completely encased in the concrete slab.

The important factors which require investigation in all three cases are, first, the extent to which the system provides lateral distribution, whereby the effects of a concentrated load (such as a wheel load) are shared by a much greater width of the system than that over which the load is directly applied; and, second, the extent to which the steel joists and the concrete slab act together in structural combination in resisting the induced bending moments. The work is divided into three general sections: (i) Tests on actual bridges; (ii) tests on bridge deck systems in the laboratory; (iii) mathematical analysis, supplemented by small-scale model analysis.

A few modern bridges have been tested in this programme and the most illuminating result has been the low values for the measured strains due to specially heavy traffic; so low, indeed, that further development of extra-sensitive strain gauges coupled with the use of very high test loads is necessary before an accurate picture can be obtained of the moment distribution in such bridges. It is at any rate clear that important economies may well result from a greater knowledge of the action of these bridges under load.

However, the tests on bridges are to some extent subsidiary to the laboratory tests in terms of obtaining data for the development of a more accurate design method for bridge systems. In the laboratory the effects of the various factors can be isolated for investigation, and later integrated to estimate the combined effects in an actual bridge.

So far as is known, no experimental work has previously been done in this country on the load-bearing capacity of reinforced concrete walls, and the present limited application is dependent on comparatively little practical experience and some short series of tests in America and Sweden. The work now started at the Building Research Station is included in the following programme:

(*a*) *Structural performance and strength.*—(i) Plain concrete walls. Determination of the strength in axial and eccentric compression, including the effects of distributed and concentrated loads; the effects of wall length and slenderness ratio, and of openings in the wall. Investigation of the strength in flexure or racking, and for combinations of vertical and horizontal loading. Examination of temperature and shrinkage stresses, their effect on the strength or cracking of the wall, and the necessary reinforcement to be provided. (ii) Reinforced concrete walls. Investigation of the effect on the strength of walls of introducing vertical and horizontal reinforcement, including lateral ties and special steel around openings. (iii) An examination of the behaviour of interconnected walls and of the interaction between walls and floors with a view to establishing a rational method of design for box construction.

(*b*) *Constructional technique.*—Study of the special difficulties associated with the placing of concrete and reinforcement in thin walls, involving high workability with adequate strength. Consideration of special techniques, *e.g.*, vacuum concrete. Determination of the best location and form of construction and expansion joints.

Strength and Stability of Houses.

In recent years many alternative types of dwelling-houses have been developed which were not amenable to structural analysis by current methods of engineering theory and practice. In order to help the Inter-Departmental Committee on House Construction (the Burt Committee) in its consideration of these types, the Building Research Station has made many loading tests on the full-scale structures. Although the tests were primarily required as "acceptance" tests, it was often possible to arrange for their scope to be widened to embrace the following field of investigation:

(*a*) To ascertain whether or not the structures examined were stable against wind, snow, and other superimposed loads;

(*b*) To provide data for increasing efficiency and economy in the use of load-bearing frames, and factory production methods for dwelling-houses;

(*c*) To investigate problems of fundamental importance in building construction, *e.g.*, the effect of non-structural components on the behaviour of structures under load.

The methods of testing adopted were mainly determined by the requirement that the buildings should be adequately strong (a load factor, against collapse, of 2.0 on the *live load only* was considered sufficient) and sufficiently stiff and elastic. As far as possible the tests were standardised in order to simplify their application and to obtain a common measure of the properties of various types of structures. A description of the acceptance standards finally adopted for strength (static and impact) and stiffness, together with some notes on the test methods, is given in a special report which is now in the press.

A considerable number of such tests has been made on different types of buildings, including framed houses of steel, concrete or timber, houses built up with

load-bearing steel, concrete or plaster panels, and houses with load-bearing walls of brick or blocks. The majority of the tests were made under field conditions on sites dispersed throughout the country and the methods employed in applying loads and measuring deformations therefore had to be adaptable to widely varying conditions.

One of the most interesting results of the field tests was the evidence obtained of the part played by floors, roof and walls in resisting the lateral loading used to stimulate the effect of wind pressure. It was evident that there was scope for reduction in the cost of load-bearing frames in small dwelling-houses by utilising the inherent stiffness of the completed building and not assuming that the frame alone resists lateral loading (except during construction, when temporary bracing elements can be introduced).

In order to obtain more complete and accurate information on this matter than could easily be obtained from the acceptance tests, a systematic investigation has been started at the Station with a view to establishing the stiffening effect of floors, roof and cladding on various types of structural frame.

House Foundations.

The conventional type of footing for houses is known to be unsatisfactory in clay sites where seasonal shrinkage is likely to occur, and it is recommended that narrow footings going to a greater depth would be more suitable. It seems possible that for such sites it may be more economical to use piled foundations for houses, with light reinforced concrete beams spanning between the piles. Tests are therefore being made on the bearing capacity of reasonably sized piles on a clay site, and companion tests are in progress with regard to the behaviour of house walls of various types supported on beams.

The thicknesses of load-bearing walls have, in the past, been largely determined by "rule of thumb" methods based on the height and length of the wall. This procedure is simple, convenient and safe, but it follows almost as a corollary that it is unlikely to be economical in terms of material or labour on the job.

In order to obtain evidence on which the design of brickwork could be put on a more satisfactory basis, a systematic study has been commenced at the Station of a number of factors which appear to be of primary importance in determining the strength of brickwork for a wide range of loading conditions. A full account of the work so far completed is now being prepared for publication, but there is still considerable scope for further investigation.

In one series of tests a study has been made of the effect of slenderness and eccentricity of loading on the compressive strength of brick piers. In other series of tests the following have been investigated:

(1) The strength of wall panels with various brickwork bonds under combined vertical and horizontal loading;

(2) The resistance of wall panels to lateral pressure (using compressed air);

(3) The resistance of wall panels to lateral impact;

(4) The strength of eccentrically loaded reinforced brick piers;

(5) The strength of piers in combination with wall panels.

An investigation has recently been started on the structural efficiency of cavity wall construction with particular reference to the minimum requirements for wall ties.

PROBLEMS OF THE BUILDING INDUSTRY

NATIONAL FEDERATION PRESIDENT'S REVIEW

A REVIEW of the problems and prospects of the building industry was given by MR. F. M. SLEEMAN, the new President of the National Federation of Building Trades Employers, when he addressed the annual meeting of the South-Western Federation in Bristol on February 25.

"In considering the position of the building industry in the campaign for national recovery," said Mr. Sleeman, "we must take the long view. What is it? It is that we require hundreds of thousands of new houses; large numbers of new factories, shops, offices, hospitals; repairs to practically every one of the 12 million houses in the country; and repairs to many thousands of other buildings. All this is urgent.

"Food, of course, comes before accommodation, but at the present time the nation is far better fed than it is housed. That has to be weighed before decisions are taken to reduce the size of an industry which has a generation's work before it. For the building industry is not an industry which can be turned on and off like a tap. The nation cannot afford to see labourers and the younger craftsmen transferred to other industries. And this will happen if there is unemployment. We are short of labourers already, and the majority of our craftsmen are old.

"What is the solution? In my opinion it is that the Government's licensing scheme must be administered in a sufficiently elastic way to prevent unemployment, to retain those whom we need most in the industry, and to ensure that the right sort of work is available for the training of apprentices. Times are hard, but there is a limit to the extent to which we can mortgage our future.

"The effect of the economic crisis has hardly yet been felt in the building industry, but unless a careful watch is kept by the Government, and timely action taken, there are bound to be pools of unemployment in many places which, in total, might soon rise to a quite alarming figure.

"The recent White Paper on Personal Incomes, Costs and Prices shows that the biggest contribution we can make towards national recovery is to build not only more quickly but at a lower cost. This means that we must go all out in the introduction of schemes of incentives.

"Last month the Minister of Health congratulated us on our record housing figures. Naturally he asked us to do better this year and to build the next 100,000 houses more quickly and at lower cost. We shall do our best, and for everybody's sake I hope we shall succeed. When we do succeed we shall recall to Mr. Bevan his promise made to us early last year—and I want to remind him of it now—that 'when we have got over the hump, you can have your head in the building of houses for sale.'

"I realise that large numbers of houses have been started and that timber and some other materials are in short supply, but is there any reason why private builders should not be given a share now? Healthy rivalry between them and the local authorities would do much to reduce the cost of new houses and to put a check on the famine prices now being charged for pre-war houses. I agree with the Minister, as we all must, that houses must go to those with the greatest need, but we claim that there are large numbers of families whose need is such that they would be at the top of the local authorities' lists and who would prefer to buy a house rather than rent one on a municipal estate. Why not leave these people to choose, and so, at a time when economy is the order of the day, reduce the heavy burdens which subsidies place on the ratepayer and the taxpayer?"

REGIONAL PRESIDENTS ELECTED

The Presidents for 1948 of the Regional Federations belonging to the National Federation of Building Trades Employers have now been elected. The list is as follows:—London Master Builders' Association, Mr. D. C. Burgess; Eastern, Mr. F. Hosking (Rayleigh, Essex); Liverpool, Mr. A. G. Clark (Liverpool); Midland, Mr. H. V. Gough (Wolverhampton); Northern Counties, Coun. Stephen Hudson (Sunderland); North-Western, Mr. J. O. Robertson (Manchester); South Wales, Mr. E. W. T. King (Newport, Mon); South-Western, Mr. J. R. R. Scull (Bristol); Southern Counties, Mr. R. R. O. Barwick, J.P. (Dover); Yorkshire, Mr. Reeves Charlesworth (Sheffield).

HOUSING PROGRESS

REPORT FOR JANUARY

THE monthly Housing Progress Reports presented to Parliament as White Papers show that the number of permanent houses completed in Great Britain during January was 15,401. This was 2,395 fewer than in December, but was the second highest monthly total since the war.

The number of houses completed in each of the last six months has been as follows: August, 11,259; September, 14,203; October, 15,398; November, 15,281; December, 17,796; January, 15,401.

The number of temporary houses finished in January was 2,016 (compared with 3,523 for December), making a total of 17,417 houses in the month (compared with 21,319 in December). The total of completed houses, permanent and temporary, is now 354,188, of which 213,351 are permanent. Of this latter figure 61,575 were erected by private enterprise, which also rebuilt 13,560 war-destroyed houses.

Production figures for building materials during January include:—

	Jan.	*Dec.*	*Nov.*	*Oct.*
Cement (1,000 tons)	693†	654‡	632‡	817†
Plasterboard (1,000 sq. yd.)	4,052†	3,583‡	3,656‡	4,422†
Drain pipes, salt glazed (1,000 tons)	*	45.6	46.9	49.8
Bricks (millions)	386	388	413	467
Plaster gypseous (1,000 tons) ..	20.8†	15.2‡	16.3‡	20.0†

* Not available. † 5-week period. ‡ 4-week period.

The total labour force employed on the construction or repair of houses in Great Britain fell during January from 567,600 to 562,000. There were 261,200 men engaged on the construction of permanent houses and preparation of housing sites compared with 264,000 at the end of December and 7,800 on erection of temporary houses, compared with 8,600 at the end of December. The number on war damage repairs dropped from 91,000 to 89,000.

INCREASED DEMANDS FOR WALLBOARD

MERCHANTS' ASSOCIATION DINNER

REFERENCES to the increasing demands for wallboards and the steady rise in the number of purposes for which they can be used were made by MR. REGINALD T. ALVIN, chairman of the Wallboard Merchants' Association, when he presided at the Association's dinner held on February 25 at the Hyde Park Hotel, London.

Replying to the toast of "The Association," Mr. Alvin said it was unfortunate that the present regulations made it possible for but a relatively small number of members to be present at the dinner. Nevertheless, the Association continued to make good progress and he felt it could justly claim to be truly representative of the wallboard merchants of the United Kingdom, whose need of a strong, active, independent association was greater than ever.

"As the years go by," he continued, "the demand for wallboards grows apace. The number of purposes for which they can be used has multiplied enormously during the last few years, and I see signs, doubtless due to the fuel crisis last year, that the public are becoming more insulation conscious. I feel sure that tendency will grow. There is no doubt that demands for all types of wallboard will increase appreciably now that new mills are being set up in Sweden and Norway. Moreover, Canadian and American mills will also expect visits. Our home manufacturers should now be given encouragement and facilities to increase their own products and improve the quality of their boards.

"The time is fast approaching when the manufacture of building board or wallboard may justifiably be described as a major industry, when it will no longer be considered as something in the nature of a sideline.

"Two of the more urgent matters which need attention at an early date are a clarification of the structure of the trade, to bring it more into line with the present day and its problems, and the preparation of a scheme for importing boards, introducing some measure of decontrol. I feel all sections of the trade should confer on these matters as soon as possible. I do not know whether the Board of Trade would give any encouragement to the second of these points, but I do consider that something in this direction should be done."

MR. C. GEOFFREY CULLEN, chairman of the Building Board Manufacturers' Association, who proposed the toast to which Mr. Alvin replied, congratulated the Wallboard Merchants' Association on its achievements during its short lifetime and expressed the hope that the Association, as it went from strength to strength, would not forget the little merchant. He was still convinced that the little man meant more to them than they were prepared to admit and he hoped the Association would give traders in this category a chance to air their views.

MR. CLIFFORD B. NORTH, proposing the toast of "The Guests," said that during the past year the Association had negotiated an agreement with Building Industry Distributors with the object of including the interests of the wallboard distributors in one organisation. He would like to assure the President of B.I.D., Mr. J. W. Rains, of their appreciation of the co-operation extended in this important development.

The contact the Association had made during the past few months with the newly-formed Fibreboard Agents' Association was also an important development in the wallboard industry, and he was sure the discussions held would result in establishing an effective liaison between the Association and those overseas manufacturers who had accredited agents in this country.

Among the guests who responded to the toast were MR. H. J. GRAY, of the Raw Materials Department of the Board of Trade; MR. KNUT ERIKSSON, of Stockholm; MR. THURE NILSSON, of Stockholm; MR. HERBERT SUTCLIFFE; MR. C. OLDBY, of Sweden; MR. S. STENNBERG, of Belgium; and MR. VOLRATH THAM, chairman of the Fibreboard Agents' Association.

The toast of "The Chairman" was given by MR. W. R. BOUSFIELD.

IN PARLIAMENT

Housing Statistics.

MR. C. WILLIAMS asked the Minister of Health if he would publish all the figures in his possession of the number of houses built in Great Britain in each of the years 1908 to 1914, inclusive.

MR. BEVAN said that no precise information was available. The following figures of the annual net increase in the number of houses could be deduced from the statistics of inhabited house duty: 1908-9, 97,476; 1909-10, 102,464; 1910-11, 36,157; 1911-12, 92,535; 1912-13, 60,029; 1913-14, 58,680. Total, 447,341.

Rural Housing.

MR. HURD asked the Minister of Health why some of his Regional Officers had refused applications for the building of farm workers' cottages sponsored by county agricultural executive committees; and if a limit to the number of such houses had been laid down for each region.

MR. BEVAN said that the limiting factor was the supply of labour and materials. His Regional Officers had agricultural needs well in mind, but if demands exceeded building resources in a particular locality it might not be possible to accept all applications immediately. The answer to the second part of the question was "No."

Stonemason Apprentices.

MR. HOGG asked the Minister of Works what was the proposed target for the Southern Region, and for the other Regions of the country, of apprentices for stonemasons training under the National Apprenticeship Scheme; how many apprentices were actually under training; and whether he proposed to take any further steps to attract new skilled labour to this craft.

MR. DURBIN said the Building Apprenticeship and Training Council in their third report recommended that the Ministry should aim for the present at recruiting annually at least 1,000 mason apprentices, but beyond this national estimate the Council were unable to go The total number of youths aged 14-21 in the category of masons (excluding monumental masons) at July, 1947, was 1,110. The Council had urged all local apprenticeship committees to try to reach this target. An Apprentice Master Scheme for masons had been instituted by the Department, and the Ministry of Labour provided a vocational training scheme under which ex-Servicemen were trained.

OFFICIAL NOTIFICATIONS

Increased Prices for Lithopone.

Following investigation by the Board of Trade's Advisory Accountants on Lithopone prices, the Board has agreed that the price charged for Lithopone as from March 1 should be £33 12s. 6d. per ton. The rise in price has been necessitated in part by the increased cost of imported materials.

Cast Iron Rainwater and Soil Goods.

The Iron and Steel Board and the Ministry of Works have decided that, commencing Period II, 1948, the issue of form M authorisations to consumers and/or merchants' stockholding licences to acquire (a) cast iron rainwater and soil goods including smoke pipes, (b) cast iron hot-water pipes and fittings, (c) manhole covers and frames and sundry builders' unfitted castings, and (d) furnace pans, will be discontinued and that the manufacturers will receive bulk allocations to cover supplies of these items.

W.B.A./H. Certificates.

THE Ministry of Health states that as from March 1, under a new simplified procedure, the issue of W.B.A./H certificates to contractors engaged on new housing schemes and the provision of copies to the other interests specified will no longer be required. Employment exchanges of the Ministry of Labour will continue to give preferential treatment to demands for labour presented to them by contractors engaged on new housing contracts. Contractors should be requested to specify the nature of the work and to give brief details of the contract when notifying their labour demands to the appropriate employment exchange. Existing procedure under the Materials Priority Scheme (Control of Building Materials (No. 1) Order, 1947—Circular 140/47) will remain unchanged except that the "box" in the top left-hand corner of Form BM.104 will no longer be completed. The priority symbol given in Part II of the form will be the effective authorisation necessary to permit completion by the purchaser of Form BM.106.

RATES OF WAGES IN THE BUILDING TRADE [AS FROM NOV. 16]

(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	2/9	2/8½	2/8	2/7½
Labourers	2/2½	2/2	2/1½	2/1¼

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A3
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone	A1
Aylesbury	A2
Aylesby	A
Aylsham	A3
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A1
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A2)	A
Basingstoke	A2
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A3
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamstead	A1
Berrington	A1
Berwick District	A1
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A1
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A1
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A1
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A2
Breconshire, County of	‡A3
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A1
Bristol	A
Broadstairs	A2
Bromsgrove U D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A3
Burnham-on-Crouch	A3
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A3
Buxton	A1
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A3
Carlisle	A
Carmarthenshire, Cnty. of	‡A3
Carnarvonshire, Cnty. of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A1
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs.) R.D.	A
Chelmsford	A
Cheltenham	A1
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A3
Doncaster	A
Dorking	A1
Dorset, County of (except-ing Poole and Wimborne A1)	A2
Dover	A2
Dovercourt	A1
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A3
Epping	A
Exeter	A1
Fakenham	A3
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A1
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough R.D. (Mid. pt.)	A2
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A1
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole	A
Gosport	A
Grantham M.B.	A1
Gravesend	A
Great Yarmouth	A1
Grimsby	A
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A1
Harpenden	A1
Harrogate	A
Hartlepools	A
Harwich	A1
Haslemere	A2
Hastings	A2
Hatfield	A
Haywards Heath	A2
Hemel Hempstead	A1
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A1
Hoddesdon	A
Holt (Norfolk)	A3
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon	A3
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A3
Jarrow B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A2
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A2
Letchworth	A1
Lewes	A2
Lichfield M.B.	A1
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A3
Lowestoft	A1
Loxton	A2
Luton	A
Lyneham (Devon)	A1
Macclesfield	A1
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A2
Malvern U.D.	A2
Manchester	A
Manningtree	A1
Mansfield M.B	A
March	A2
Margate	A2
Market Harborough	A1
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A3
Melton Mowbray U.D.	A2
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A1
Milford Haven	A2
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A1
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A2
Newmarket	A2
Newport, Mon	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
,, Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A3
Ramsgate	A2
Rayleigh	A1
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A1
Saxmundham	A3
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A1
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A1
Sleaford U.D.	A3
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A1
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B	A
Stourport U.D.	A
Stowmarket	A3
Stratford-on-Avon M.B.	A1
Sunderland District	A
Sunningdale	A
Sutton Coldfield M.B.	A
Swaffham	A3
Swanage	A3
Swansea	A
Swindon	A2
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A3
Thorpe Bay	A1
Thurrock U.D.C. Area	A
,, North of, to Billericay	A1
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington R.D.	A1
Wells (Norfolk)	A3
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A2
Whitby	A1
Whitstable and District	A2
Wickford	A1
Widnes	A
Wigan	A
Wigton	A3
Willington	A
Wilmslow	A
Wilts, County of	‡A2
Winchester	A2
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A2
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A3
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A2
Wylam	A
Wymondham	A3
York	A

* For Birkenhead, Liverpool, and London the rates are :—Craftsmen, 2s. 10½d.; Labourers, 2s. 3½d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 2s. 10d.; Labourers, 2s. 3½d.

† Plus 2d. per working day.

‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 1s. 11d. per hour. Women introduced to carry out work other than craft processes, 1s. 7d. per hour. (Change to date from beginning of pay week following December 7, 1947.)

For Building Trade Wages in Scotland, see page 293

PRICES CURRENT OF MATERIALS*

NOTE.—These prices apply to large quantities of materials at works at London stations, or site, in London area as stated. Prices for smaller quantities ex merchant's warehouse will of course be higher. Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. The prices of soft woods are for cash on delivery.

BRICKS, &c.

	£ s. d.
First Hard Stocks	8 15 0
Second Hard Stocks	8 0 0
Mild Stocks	6 10 0

All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.

2½ in. Phorpres. A discount of 6d. 1,000 only monthly account.	Certain London L.M.S. Stations per 1,000. s. d.	Sites in P.B.M.A. Area N. of Thames per 1,000. s. d.
Pressed	73 0	88 0
Keyed	75 0	90 0
Single Bullnose	93 0	108 0
Rustics	93 0	108 0
Whites	93 0	108 0

	£ s. d.
Best blue Pressed Staffs. (London Stns.)	18 9 0
Do. Bullnose (London Stns.)	19 2 0
Blue Wire Cuts (London Stns.)	16 7 6

Best Stourbridge Fire Brick (London Stns.) :—

£ s. d.	£ s. d.
2½ in. 16 18 6	3 in. 19 16 0

GLAZED BRICKS (London Stns.). The prices given below are now subject to a percentage addition of 22½.

Best White Ivory and Salt Glazed Stretcher	40 0 0	D'ble Stretchers D'ble Headers One side & two ends	53 10 0 48 10 0 54 10 0
Headers	39 10 0	Two sides & one end	56 0 0
Quoins, Bullnose & 4½ in. Flats	50 0 0	Splays and Squints	52 0 0

Second Quality, £2 0s. per 1,000 less than best. Cream and buff, £2 0s. extra over white. Other colours. Hard Glaze, £5 10s. 0d. extra over white.

Haulage to site 20s. 1,000.

PARTITION SLABS.

Delivered London Area.
12 miles radius Charing Cross.

HOLLOW CLAY PARTITION BLOCKS.
London Brick Company.

Minimum Lorry Loads. Keyed.	s. d.
2" per yd sup. 120 yds.	3 1
2½" " " 100 "	3 4
3" " " 100 "	4 0
4" " " 84 "	4 7

Half blocks *add* 2s. per yard super to above prices.

CLINKER CONCRETE.

2" per yd. sup.	2 8	3" per yd. sup.	4 0
2½" "	3 4	4" " "	5 3

CRANHAM TERRA COTTA.

Size 12 x 9 x 2" per yd. super	3 1
Size 12 x 9 x 2½" " "	3 4
Size 12 x 9 x 3" " "	4 0
Size 12 x 9 x 4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12 x 9 x 2"	3 1	12 x 9 x 3"	4 0
12 x 9 x 2½"	3 4	12 x 9 x 4"	4 7

Per yard super d/d. Free on site, London.
Plus 2d. for smooth one side, and 4d. for smooth both sides.

STONE.

BATH STONE—	s. d.
Monks Park	5 4
St. Aldhelm Box Ground	5 10
Delivered in railway trucks at South Lambeth, G.W.R., per ft. cube.	

PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly. per ft. cube	6 1½
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft.	

HOPTON-WOOD STONE—	
F.O.R. Quarries, Wirksworth, Derbyshire	
Random blocks from 10 ft. and over p.ft.cb.	13 2
Sawn two sides	26 11
Sawn three or four sides	31 11

YORK STONE, BLUE—*Robin Hood Quality*.
Delivered at any Goods Station, London.

6 in. sawn two sides landings to sizes (under 30 ft. super) per ft. super	9 4
6 in. rubbed two sides, ditto "	10 10
3 in. sawn two sides slabs (random sizes) "	4 5
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) "	2 4
1½ in. to 2 in. ditto "	2 1½

HARD YORK—	
Delivered at any Goods Station, London	
Scrappled random blocks per ft. cube	13 4
6 in. sawn two sides landings to sizes (under 40 ft. super) per ft. super	10 0
6 in. rubbed two sides, ditto	11 10
4 in. sawn two sides slabs (random sizes) "	6 5
3 in. ditto ditto "	4 10
2 in. self-faced random flags per yd. super	19 9

CEMENT.

Best British Portland Cement. Standard Specification delivered London area.	£ s. d.
6-ton loads and upwards site..... per ton	3 0 6
1- to 6-tons site	3 3 6
In non-returnable paper bags charged at 11/- net per ton or 6d. each net per sack in lots of less than 1 ton.	
In non-returnable jute sacks charged at 9/- per ton.	
In returnable jute sacks charged at the rate of 35/6 net per ton of cement of 1/9½ net per sack in lots of less than 1 ton. Credit on return at 1/6 net per sack.	
In returnable cotton sacks charged at the rate of 3/4 net each sack. Credit on return at 3/- net each sack.	
"Ferrocrete" Rapid Hardening Cement: 6-ton loads and upwards site	3 6 6
1- to 6-tons site	3 9 6
In paper bags 11s. per ton extra.	
"Aquacrete" Water Repellent cement, 32/6 per ton on ordinary "Blue Circle" prices. In paper bags 9s. per ton extra.	
Red, Buff or Khaki "Colorcrete" in 6-ton lots	5 2 0
In paper bags 9s. per ton extra.	
Other colours, according to colour. In 4-ton lots from 197/- to 406/- per ton (including paper bags).	
"Snowcrete" White Portland Cement (in free paper bags)	11 13 0
Under one ton per cwt.	0 13 11
"417" Cement (Ultra Rapid Hardening) Delivered Site London Area in 6-ton lots and upwards	4 2 0
In paper bags 9s. per ton extra	
Super Cement (Waterproof), bags extra	4 12 0
Cullamix Tyrolean Finish.....£7 14 6 to	9 8 0
(1-ton lots and upwards, including cost of Paper Bags)	

£ s. d.	£ s. d.
Parian Cement 7 10 6	Keen's Cement, White 0 1 9
	" Pink 7 15 6

PLASTER.

£ s. d.	£ s. d.
Coarse, Pink 4 15 3	Sirapite, Coarse 4 16 3
" White 5 4 9	" Finish 5 4 3

Above prices for 1-ton loads and over London Area.

Blue Lias Lime, inc. bags, 6-ton lots 5 17 6	Hydrated Lime, 6-ton lots 4 1 6
Granite Chips, 6-ton lots 2 0 0	Lump Lime, 6-ton lots 3 15 3
	Hair, per cwt. 4 4 6

Stourbridge Fireclay in paper bags £4 2s. 0d., 6-ton lots at railway depot.

SAND.

D/D site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

Thames Ballast	15s. 9d.	per yd.
Pit Ballast	15s. 10d.	"
Pit Sand	15s. 2d.	"
Washed Sand	17s. 0d.	"
¾ in. shingle	15s. 2d.	"
¾ in. Broken Brick	17s. 6d.	"
Pan Breeze	10s. 4d.	"

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons	Per 1,000 f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£9 5 0
Ditto hand-made ditto	11 0 0
Ornamental ditto	11 12 6
Hip and valley tiles—Hand-made	18 6
(per dozen) —Machine-made	17 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station.

Per 1,000 actual.	£ s. d.		£ s. d.
24 by 12	65 17 6	18 by 10	33 12 6
22 by 12	53 3 0	18 by 9	29 6 0
22 by 11	48 4 3	16 by 10	29 2 6
20 by 12	46 10 0	16 by 8	23 4 6
20 by 10	42 10 0		

NOTE : Breakage in transit, purchasers' responsibility

PLUMBERS' BRASS WORK.

Delivered in London.
M.O.H.

S.D. BIBCOCKS CRUTCH HEAD, FOR IRON.
½ in. 66/- ¾ in. 108/- per doz.
TOILET BIB COCKS FOR IRON.
½ in. 114/- ¾ in. 171/- per doz.
S.D. STOP COCKS FOR IRON.

¼in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.	
72/-	111/-	189/-	269/-	363/-	590/-	per doz.

S.D.S. COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
102/-	164/-	264/6	369/-	438/-	736/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
17/-	20/-	33/-	68/-	108/-	140/-	per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.		
93/-	149/-	185/-	371/-	500/-		per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
23/6	26/6	45/-	68/-	89/-	112/-	per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.	
29/-	31/-	67/-	83/-	101/-	per doz.

LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1½ x 6 lb.	1½ x 6 lb.	2 x 7 lb.	3 x 7 lb.	
Lead P.	57/-	69/-	111/-	144/-	per doz.
Lead S.	69/-	84/-	138/-	153/-	per doz.

SOLDER.—Plumbers', 3/1, Tinmen's 3/11, Blow pipe, 4/- per lb.

Copper Tubes.....2/1½ per lb. Basis.
Brass Tubes.....1/-½ per lb. Basis.
Basis prices are subject to extras.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil (5 galls.)	per gallon	1 3 3
Boiled Linseed Oil (5 galls.)	"	1 3 7
Genuine White Lead (free kegs)	cwt.	7 9 0
Genuine White Lead Paint (tins free)	gall.	2 12 0
Genuine Red Lead	cwt.	6 14 6
Putty (free packages)	cwt.	3 2 6
Size XD quality	f'kn.	0 9 0

Turpentine substitute can be obtained and prices vary according to quality from 3/8 gallon upwards.

VARNISHES, &c.

		Per gallon
Oak Varnish	Outside	1 6 0
Fine do.	"	1 16 0
Fine Copal	"	1 15 0
Pale Copal	"	1 12 8
Floor Varnish	Inside	1 10 0
Fine Pale Paper	"	2 1 0
Hard Drying Oak	"	1 10 0
Fine Hard Drying Oak	"	1 12 0
Fine Copal Varnish	"	1 13 6
Best do.	"	1 16 0
Best Japan Gold Size	"	1 15 0
Best Black Japan	"	1 8 6
Brunswick Black		1 4 6
Berlin Black		1 8 6
Knotting (patent)		1 12 6
French and Brush Polish		1 18 6
Liquid Dryers in Terebene		1 8 6

GLUE.

Best Scotch Glue	per ½ cwt.	4 14 6
Croid Glue	per lb.	2 9

* The information given on these pages has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)
See Note at top of preceding page.

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R. S. Joists, cut and fitted	£30 7 6
Plain Compound Girders	34 17 6
" Stanchions	42 7 6
In Roof Work	52 17 6

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	26 17 6	⅝ in.	24 12 6
⅞ in.	26 2 6	¾ in. to 2¾ in.	23 17 6
1 in.	25 7 6		

WROUGHT TUBES AND FITTINGS.
Deliveries from works.
Deliveries from London stock further 2½% gross.

	Tubes. ½"/6" %	Tubulars. ½"/6" %	10/17 and 19/24 %	Flanges. ½"/2" %	2½"/6" %
Light weight	49½	—	45½	49	55½
Heavy weight	42	42	37½	39	47½
Galv. lightweight	28	—	28	28	28
Galv. heavyweight	18	18	18	18	18

Tubes and tubulars sizes ½"/⅜" inclusive, charged extra of 5% less gross.
Fittings. Figs. 25/34 5% less gross discount.
Terms.—Net cash end of month following date of invoice. Carriage paid on lots of £10 nett value and over.

C.I. HALF-ROUND GUTTERS.—London Prices ex Works, per yd. in 6 ft. lengths.

	Gutters.	Nozzles.	Stop ends.
3 in.	2/5	2/2	7d.
3½ in.	2/8	2/5	7d.
4 in.	2/10	2/7	1/–
4½ in.	3/1	3/–	1/2
5 in.	3/5	3/3	1/3
O.G. GUTTERS			
3 in.	3/1	2/10	9d.
3½ in.	3/7	2/10	1/–
4 in.	3/7	3/–	1/2
4½ in.	3/8	3/5	1/3
5 in.	4/6	4/–	1/5

RAIN WATER PIPES.

Per yd. in 6 fts.	Pipe.	Bends. Angles.	Branches.
2 in.	5/–	2/7	3/10
2½ in.	5/3	3/–	4/6
3 in.	5/10	3/8	5/6
3½ in.	6/8	4/5	6/5·
4 in.	7/8	5/3	7/8

NET PRICES.
Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES.—London Prices, ex stock.

Per yd. in 6 fts.	Pipe	Bends	Branches.
2 in.	5/11	4/6	5/6
2½ in.	6/3	5/1	6/10
3 in.	6/11	5/6	8/3
3½ in.	7/10	6/10	9/6
4 in.	8/11	7/8	11/1

L.C.C. COATED DRAIN PIPE.

cwt. qr. lbs. in 9 fts.	per yard.	Bends.	Branches
4 in. 1 1 17....	12/10	12/3	21/6
6 in. 2 0 1....	19/2	25/4	43/9

	Per ton basis in London £ s. d.
IRON.—Staffordshire Crown, Merchant quality	28 5 0
IRON.—Staffordshire Marked Bars	36 0 0
Mild Steel Bars	22 10 0
Mild Steel Hoops	23 17 6
	Ex Merchant's Stock. per ton (two-ton) lots £ s. d.
Soft Steel Sheets, C.R. and C.A.—	
20 gauge	28 7 6
24 gauge	29 7 6
26 gauge	29 12 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—	
20 gauge	34 15 0
24 gauge	36 10 0
26 gauge	38 15 0
Galvanised Flat Sheets, C.R. and C.A.—	
20 gauge	35 15 0
24 gauge	37 10 0
26 gauge	39 15 0
	Per ton. £ s. d.
Cut Nails, 3 in. and up, 1 ton lots	36 15 0

ALL NET.
METAL WINDOWS.—Standard sizes suitable for complete houses, included all fittings, painting two coats, and delivery to job, average abou: 5s. 0d. to 5s. 3d. per foot super.

LEAD, &c.

(Deliveries in London 5 cwts.)	Per ton £ s. d.
LEAD.—Sheet, English, 3½ lb. and up	107 10 0
Pipe in coils	108 15 0
Soil pipe	112 15 0
Compo pipe	115 15 0

NOTE.—Country delivery, 10/– per ton extra, lots under 3 cwt., 4/– per cwt., extra and over 3 cwt. and under 5 cwt., 3/– per cwt. extra. Extra if cut to size. Old lead, ex London area, per ton, £68 0 0. Buyers pay carriage.

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from November 17, 1947. Every effort is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification A Craftsmen..... 2/9 Labourers 2/2½

Aberdeen ....A	Dumfriesshire ....A	Inverness ....A	Perthshire ....A
Ayrshire ....A	Dundee ....A	Inverurie ....A	Peterhead ....A
Banff ....A	Dunoon ....A	Kincardineshire ..A	Renfrewshire ....A
Berwickshire ....A	East Fife ....A	Kinross-shire ....A	Rothesay ....A
Bridge of Allan....A	East Lothian....A	Lanarkshire ....A	Roxburghshire ....A
Broughty Ferry....A	Edinburgh ....A	Midlothian ....A	St. Andrews ....A
Clackmannanshire A	Fifeshire ....A	Monifieth ....A	Selkirkshire ....A
Doune ....A	Forfarshire ....A	Moray and Nairn ..A	Stewartry ....A
Dunblane ....A	Glasgow ....A	Newport ....A	Stirlingshire ....A
Dunbartonshire ..A	Greenock ....A	Peeblesshire ....A	Stornoway ....A
Dumfries ....A	Hamilton ....A	Perth ....A	Tayport ....A
			West Lothian ....A

The Scottish N.J.C. award on which this is based provides for variation to current rates of Apprentices' and Trainees' wages, which will be increased according to scale.
The Information given in this table is copyright.
Painters' rates: 2/9 Grade A; 2/8 Grade B. (Grade B towns are Banff and Moray and Nairn).

GLASS.

SHEET GLASS, ORDINARY GLAZING QUALITY.

CUT SIZES	Per ft. super. d
18 oz.	4½
24 oz. Clear	6½
26 oz.	7½
32 oz.	10½

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

Over 500 ft. super of all kinds.	Per ft. d
Rolled plate, ¼ in.	7¼
Rough cast, ⅛ in.	9
Rough cast, ¼ in.	9
Figure rolled, and Cathedral white	7½
Figured rolled and Cathedral tinted	10½
Rolled sheet	6
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	11

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10½

HOLLOW GLASS BLOCKS.	s. d.	
P.B. 2—5½ in. x 5½ in. x 3½ in.	2 6	each net
P.B. 3—7½ in. x 7½ in. x 3½ in.	3 6	"
P.B. 32—7½ in. x 7½ in. x 3½ in.	3 6	"
Radiused Corner Brick to match up with—		
P.B. 2	4 6	"
P.B. 3	6 0	"
P.B. 32	6 0	"

TIMBER, SOFTWOODS AND HARDWOODS.

HOME GROWN TIMBER PRICES.—See *Statutory Rules and Orders*, 1947, No. 94, price 5d. net.
IMPORTED SOFTWOODS PRICES.—See *Statutory Rules and Orders*, 1947, No. 731, price 1s. 1d. net.
IMPORTED HARDWOODS PRICES.—See *Statutory Rules and Orders*, 1947, No. 1524, price 1s. 1d. net.
Note.—The above can be obtained from H.M Stationery Office, York House, Kingsway, W.C.2.

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THE SCOTTISH BUILDER

NEW BUILDINGS

Edinburgh.—Scottish National Institution for War Blinded propose setting up colony at Lindburn estate, Kirknewton. Architects, Lorimer & Matthew, 13, Gt. Stuart-st., Edinburgh.

Glasgow.—Alterations and additions for Currie, Ltd., for which the architect is J. T. Thomson, 212, Bath-st., Glasgow.—New housing scheme at Crosshill-av. and Queen's-dr., for which the architect is R. Bradbury, 20, Trongate, Glasgow.—Additions and alterations for Diocese of Episcopal Church, for which the architects are Noad & Wallace, 147, West Regent-st., Glasgow.—Additions and alterations, etc., at 84 to 96, Darnley-st., for which the architect is J. Taylor, 196, West Regent-st., Glasgow.

Glasgow.—New school buildings at Ardoch-st., for which the architect is J. MacNab, 129, Bath-st., Glasgow.

Glasgow.—New building, etc., proposed at Duke-st., for Wm. Beattie, Ltd., wholesale bakers, Glasgow.

TRADE NEWS

Letters lost in Fire.

The Schaverien Sheet Metal and Engineering Co., Ltd., of 336-8, Mile End-road, London, E.1, inform us that a fire developed in the post-box at the above address and a large amount of correspondence was destroyed. Would anybody who communicated with the firm on Friday or Saturday last please send in copy letters as the original letters may not have been received?

A Series of Pamphlets.

Gent and Co., Ltd., manufacturing electrical engineers, of Faraday Works, Leicester, have published pamphlets dealing with their products, including those for indicators, bells and buzzers, a silent-service luminous call system, a silent staff-locator system, and a "tell-tale" clock that makes complete charted records of all points visited by night watchmen in the course of their duty. These pamphlets are of a uniform size and therefore convenient for filing. They may be obtained on application to the company.

New Depots Opened.

Jack Olding and Co., Ltd., of Hatfield, announce that they are extending their Midland service for repair and maintenance of "Caterpillar" tractors by opening a new depot at Perton, near Wolverhampton. This will offer facilities for the maintenance of up to fifty tractors at one time and will be under the control of Mr. A. Culpin. The company have also opened a service and spares depot at Bolton, which will be responsible not only for the maintenance and repair of all "Lima" excavators but also for the stocking and issue of all spare parts. In charge of the depot is Mr. Cameron.

M.A.F. FARM-BUILDING COMPONENTS

When sales of M.A.F. standard structural components for farm buildings (illustrated in *The Builder*, February 20) commence in May, farmers and landowners will be able to order them from area stockists direct, or through other builders' merchants, through a builder or architect, or any other ordinary channel provided that a building licence has been obtained and that the number of the licence is quoted on the order. A list of stockists and of the counties they will serve follows:—

B. Finch and Co., Ltd., Belvedere Works, Barkingside, Essex. Essex, Hertford, Buckingham, Middlesex, Bedford.

(a) R. Passmore and Co., Ltd., The Lime Kilns, Three Colt-street, Limehouse, London, E. Kent and East Sussex. (b) Hall and Co., Ltd., Victoria Wharf, Cherry Orchard-road, Croydon. Surrey and West Sussex.

C. R. Watson and Co., Ltd., Southgate-street, Bury St. Edmunds. Norfolk and Suffolk.

A. R. and W. Cleaver, Ltd., Wood-street, Northampton. Northampton, Leicester, Rutland, Huntingdon, Cambridge.

Wm. Dibben and Sons, Ltd., 31, Winn-road, Southampton. Hants, Dorset, Wilts, Berks., Isle of Wight.

The Devon Trading Co., Ltd., Queen-street Station Yard, Exeter. Devon, Cornwall, Somerset.

Sessions and Sons, Ltd., 132, Southgate-street, Gloucester. Gloucester, Hereford, Monmouth, Oxford.

The South Wales Builders Supply Co., Ltd., 67, Dock-street, Newport, Mon. Glamorgan, Brecon, Carmarthen, Pembroke, Cardigan, Radnor.

Rowe Bros. and Co., Ltd., Pall Mall, Liverpool, 3. Montgomery, Merioneth, Carnarvon, Denbigh, Flint, Anglesey.

E. H. Smith (Westhaven), Ltd., 1, Sherbourne-road, Acocks Green, Birmingham. Shropshire, Stafford, Worcester, Warwick.

Buxton Dawson, Ltd., 206, London-road, Derby. Lincoln, Derby, Nottingham.

J. H. Bean and Co., Ltd., 31, Upper Mill-hill, Leeds, 1. Yorkshire.

Harry Mason and Sons, Ltd., Moor-lane, Bolton. Cheshire, Lancashire, less Furness.

W. S. Wilkin, Ltd., Abbey-road, Barrow-in-Furness. Westmorland, Cumberland, plus Furness.

J. M. and J. Bartlett, 3-4, Higham-place, Newcastle-on-Tyne. Northumberland, Durham.

NEWS ITEMS

Retirement and Appointment.

Mr. George J. Spicer, who has been connected with Associated Asphalt Co., Ltd., and the group of companies at Queensberry House, South Kensington, for many years, is retiring this month and taking up an appointment as secretary to Asphalt Roads Association.

British Standards.

The British Standards Institution, 28, Victoria-street, S.W.1, has issued the following British Standards: Portland Cement (Ordinary and Rapid Hardening), B.S. No. 12, 1947 (price 3s. 6d., post free); Portland-Blastfurnace Cement, B.S. No. 146, 1947 (price 3s. 6d., post free), and High Alumina Cement, B.S. No. 915, 1947 (price 3s. 6d., post free).

Federation of Master Builders.

At the annual general meeting of the London region of the Federation the following officers were elected for 1948: President, Mr. W. A. Mackridge, M.I.O.B., of W. M. Glendinning, Ltd.; Vice-President, Mr. A. S. Charlton, of A. J. Charlton and Son; and Hon. Treasurer, Mr. F. G. C. Jackson, of Francis Jackson Development, Ltd. Council representatives were also elected from each of the 37 areas set up in the London region.

Building Department Prizes.

Prizes and certificates were presented to building department plumbing students of Barnsley Technical College by the president of the Institute of Plumbers, Mr. Ion Dyson, in the college hall on February 17. He spoke of the high standard of craftsmanship still demanded in the proper use and understanding of copper and also urged qualified students to enter for the Cox Memorial Competition. Dr. F. Heathcoat, M.Sc., Ph.D., principal of the college, complimented the staff of the building department who were associated with the students' successes, and the head of that department, Mr. N. C. Sidwell, M.I.Struct.E., gave a review of the year's work.

New Book on Carpentry.

"Carpentry for the Building Trades," by E. A. Lair, published by the McGraw-Hill Publishing Co., Ltd. (New York and London), is a well-produced book which aims at providing the essentials of practical carpentry for the building trades. It is also intended to be used as a definite course for classes in carpentry and presents knowledge and operations that seem to the author to be essential for the student who wishes to secure employment as an advanced apprentice. The final chapter is devoted to a list of questions and problems. Also given are suggestions as to how many of the operations outlined in the book can be taught without a house or building to construct.

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Industrial First Aid.

The United Steel Companies, Ltd., 17, Westbourne-road, Sheffield 10, announce that a pocket-book entitled "Advanced Industrial First Aid," written by Dr. R. A. Trevethick, M.B., Ch.B., resident medical officer at their Steel, Peech and Tozer branch, has been republished as a result of many requests. The book is obtainable direct from the printers, Messrs. Henry Garnett and Co., Ltd., "Advertiser" Office, Rotherham, Yorks, at a cost of 3s.

Building Industry Discussion Group.

The builders, general foremen and technical staff in the Maidstone district have combined to form a discussion group. The object of the group is to enable members to meet and discuss technical and administrative matters and to visit works and centres of general industrial interest. Meetings will be held monthly, and additional dates will be set aside for special events. In addition, there will be opportunities for purely informal talks relating to current problems and points of interest. At the inaugural meeting held recently, Mr. F. Leslie Wallis, O.B.E., J.P., F.I.O.B., was elected president of the group. Mr. V. H. Last was elected honorary secretary and Mr. K. W. Smith was elected honorary treasurer. Many ideas and proposals for future activities arose from the meeting and a full programme is being arranged.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

MARCH 10.

†***Lincoln (Parts of Kesteven) C.C.**—Alterations at Caythorpe Court and Stable Block for Farm Institute. C. B. Metcalfe (F.), County A., County Offices, Sleaford. Tenders by April 5.

†***Somerset C.C.**—(1) 1 pair of police houses at Bridgwater; (2) 1 pair of police houses at Minehead; (3) extensions to County Architect's Offices, Taunton. R. O. Harris (F.), County A., Park-st., Taunton. Dep. £2 2s. each project.

MARCH 11.

†***Staffs C.C.**—Kitchen and dining-room at Belt-rd. County Secondary (Modern) School, Hednesford, Cannock. A. C. H. Stillman, Architect and S., County Education Offices, Earl-st., Stafford. Dep. £2 2s.

MARCH 12.

†***Chepstow U.D.C.**—6 houses off Thornwell rd., Bulwark. A. Gill, C. Dep. £3 3s.

†***Old Fletton U.D.C.**—10 houses at Chapel-st., extension, Stanground. A. W. and H. J. Wilson (FF.), Cumbergate, Peterborough. Dep. £2 2s.

MARCH 15.

***Canterbury T.C.**—Site No. 1: 10 houses at Martyrs Field; site No. 2: 22 houses at Springla. City A. Dep. £2 2s.

Chippenham T.C. — 30 dwellings at "Derriads," with possible addition of 6 dwellings adjoining Ladyfield-rd. B.E. Dep. £2 2s.

†***Eton R.D.C.**—4 houses and 2 blocks of 4 flats off Bangor-rd., Iver. G. L. Bridger, C., Windsor-rd., Slough.

Ilkley U.D.C.—Adaptation of "The Bracken," Crossbeck-rd., into flats. E. and S.

Liverpool T.C.—Erection of Speke Secondary Modern School. City A. and Director of Housing. Dep. £2 2s

Pewsey R.D.C.—16 Airey houses at 3 sites. L. J. Timothy, S., Council Offices. Dep. £2 2s.

†**Portsmouth T.C.** — Reinstatement of war damage and alterations and additions to nurses' home No. 1, St. Mary's Hospital, Milton-rd. City A. Dep. £3 3s.

†*Torquay T.C.—100 houses at Combe Pafford estate. B.S. Dep. £5 5s.
Wembley T.C.—Erection of 30 or 60 houses at Fryent estate, Church-la., Kingsbury. Boro' Treas. Dep. £2 2s.

MARCH 16.

†*Norfolk E.C.—Brick wash-up and store at Hoveton County Primary School. F. G. Limmer (F.), Ed. Architect.
Ryde T.C.—Erection of Information Bureau and Superintendent's Office at Western Esplanade-gdns. B.S., 5, Lind-st.

MARCH 17.

Exeter T.C. — Erection of Summerway Primary School, Pinhoe-rd. estate. City Treas. Dep. £2 2s.
Huntingdon R.D.C.—6 pairs of Airey houses at Sawtry. W. Midwood, C., Montagu House, Huntingdon. Dep. £2 2s.
Newtownards R.D.C.—74 houses at 4 sites. Roe, Stevenson and Sons, 71, Gt. Victoria-st., Belfast. Dep. £2 2s.
Tunbridge Wells B.C.—(a) 18 houses at Eridge-rd. estate, and (b) 6 houses at Clifton-rd. H. P. Bishop, B.S. and Water E., Town Hall. Dep. £3 3s. for (a) and £1 1s. for (b).

MARCH 18.

Leeds T.C.—Conversion of No. 11, Blenheim-terr. into flats. City A. Dep. £2 2s.
Wilts E.C.—Alterations and additions to 1, The Factory, Castle-rd., Salisbury. County A., County Hall, Trowbridge. Dep. £2 2s.

MARCH 19.

Hertford R.D.C.—4 houses at Birch Green, Hertingfordbury. A. E. Williams, C., Council Offices, 20, Castle-st. Dep. £3.
Hoddesdon U.D.C.—12 houses at Forres estate. E. and S. Dep. £3 3s.
Salford T.C.—Single-storey brick building with patent concrete flat roof for ante-natal clinic at Hope Hospital. City E. Dep. £2 2s
Sunderland C.B.—Erection of Valley-rd. Primary Infants' School and kitchen dining room. Education Architect, Mowbray-villas, Ryhope-rd. Dep. £2 2s.
Sunderland E.C.—Erection of Springwell Primary Junior School and kitchen dining room. Ed. Architect, Mowbray Villas, Ryhope-rd., Sunderland. Dep. £2 2s.

MARCH 20.

*Banbury R.D.C.—12 houses at Milcombe, together with road, sewers and small pump-house. Arthur Hunt, architect, Castle Wharf, Banbury. Dep. £2 2s.
*Bowdon U.D.C.—4 pairs of houses at Priory-rd. site, scheme No. 2. W. Jackson, C., Council Offices, Richmond-rd., Bowdon, Ches. Dep. £2 2s.
Malmesbury R.D.C.—14 Airey houses at Oaksey site. Walter Rudman and Edwards, 32, Market-pl., Chippenham. Dep. £3 3s.
Wexford B.C.—74 houses at Slippery Green. J. J. Byrne, T.C., Town Hall. Dep. £10 10s

MARCH 22.

Luton T.C.—Primary sub-station building and laying of extension to concrete access road at Sundon switching station, Chalton Village, Beds. Boro' E.E., St. Mary's-rd., Luton. Dep. £2 2s.

MARCH 23.

Berkhamsted U.D.C.—12 houses at Durrants Farm estate. Robert E. Hulse (L.), E. and S., Civic Centre. Dep. £2 2s.
Littlehampton U.D.C.—6 pairs of houses at Lyminster-rd. E. and S. Dep. £2 2s.

MARCH 24.

*Wakefield T.C.—20 houses at Flanshaw estate. City E. Dep. £2 2s
Wandsworth B.C.—Repairs to Nos. 16, 20, 22, 24 and 28, Shoreham-st. Boro' A. Dep. £1 1s

MARCH 26.

*Lincoln T.C.—52 houses at Newark-rd., side of Boultham Moor estate. Housing A., Stamp End, Lincoln. Dep. £3 3s.
Londonderry T.C.—82 houses with external services and site works at Academy-rd. Roe, Stevenson and Son, Quantity Surveyors, 71, Gt. Victoria-st., Belfast. Dep. £5.

MARCH 30.

*Beckenham T.C.—Repairs to houses at Elmers-end estate. E.E. and S. Dep. £2

MARCH 31

Shoreditch B.C. — Erection of one-storey public wash-house addition at Haggerston Baths. Boro' A. and S., Town Hall. Dep. £3 3s
*Thornton Cleveleys U.D.C.—Motor house and pumping station at junction of Westmorland-ave. and Cleveleys-ave. E. and S. Dep. £1 1s.
*Warminster U.D.C.—16 houses with roads and sewers at Hillwood. Pictor, Snailum and Huggins (F. and A.), Abbey-chbrs., Bath. Dep £2 2s.

APRIL 3.

Doncaster T.C.—Demolitions, alterations and erection of additional wings at High Melton Hall for conversion into teachers' training college. W. W. Thomas, Ed. Architect, Wood-st. Dep. £2 2s.

APRIL 5.

*Maidenhead T.C.—8 pairs of houses at Pinkneys-rd. estate. B.E. and S., 17, Craufurd-rise. Dep. £2 2s.

NO DATE.

*Chatham T.C.—4 pairs of houses at Wayfield estate. Stoner and Sons, Quantity Surveyors, 69, Lincoln's Inn Fields, W.C.2. Dep. £3 3s., payable to Boro' Treas.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

MARCH 15.

Grantham T.C.—B.E. and S. (Materials)

MARCH 16.

Bedworth U.D.C.—E. and S. (Materials).
High Wycombe T.C.—B.E. (Materials)

MARCH 19.

Gillingham T.C.—B.E. and S. (Materials).
Westhoughton U.D.C.—S. (Materials).

MARCH 20.

Egham U.D.C.—E. and S. (Materials).
Heanor U.D.C. — R. Archer, M.I.Mun.E. (Materials)
Leominster T.C.—B.S. (Materials).

MARCH 22.

*Bucks. C.C.—County A. (Materials).
L.C.C.—Repainting Chelsea Bridge. Chief E. Dep. £2.
Middleton T.C.—B.E. (Materials)
Weymouth and Melcombe Regis T.C.—B.E. and S. (Materials).

ROADS, SEWERAGE AND WATER WORKS

MARCH 10.

†Ashbourne U.D.C.—Roadways at Park Lands estate. Houfton and Kington, chartered architects, The Market Place, Chesterfield. Dep. £1 1s.

MARCH 16.

Pembroke R.D.C.—Provision, laying and jointing of about 9½ miles of 3-in. spun-iron pipes, etc., in various parishes. J. Owen Parry and Lewis, Ammanford. Dep. £5 5s.

MARCH 17.

West Hartlepool C.B.—Surface dressing of approx. 150,000 sq. yds. of roads. B.E. Dep. £5.

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MARCH 18.

Newport C.B.—Construction of purification works. B.E. Dep. £5 5s.

MARCH 20.

Clacton U.D.C.—Construction of foul sewers in northern area. E. and S. Dep. £2 2s.
Hertford R.D.C.—Site preparation works at Datchworth. C., 20, Castle-st., Hertford. Dep. £3.

MARCH 22.

Chelmsford R.D.C.—840 yds. of 5-in. and 6-in. asbestos cement water mains, etc. E. and S.
Chesterton R.D.C.—Works of sewerage in two contracts in various parishes. Willcox, Raikes and Marshall, 33, Gt. Charles-st., Birmingham 3. Dep. £10 10s.
*Nottingham T.C.—Extensions to sewage disposal works, Stoke Bardolph. R. M. Finch, O.B.E., City E. and S. Dep. £5 (Cost, £100,000.)
Rowley Regis T.C.—Surface dressing of roads and footpaths. B.E. and S. Dep. £2.

MARCH 24.

Ashby-de-la-Zouch U.D.C.—7,000 yds. of 6-in. and 9-in. stoneware and 12-in. concrete sewers and extensions to sewage disposal works at Willesley-la. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.
Bourne U.D.C.—1,100 yds. of 9-in. stoneware sewer, together with manholes, etc. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

MARCH 27.

Rugby R.D.C.—Road sewer and water main extensions at Dunchurch housing scheme. D. G. McVinnie, S., 24, Warwick-st. Dep. £2 2s.

MARCH 29.

Cannock U.D.C.—Surface dressing of roads. E. and S.

MARCH 31.

Kettering R.D.C.—2,000 yds. of 4-in. and 250 yds. of 3-in. water mains. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £1 1s.

APRIL 1.

Notts C.C.—Making up various streets County S. Dep. £5.

APRIL 6.

Chester T.C.—Completion of roadworks at Blacon housing estate, section 1. City E. and S.
Rochford R.D.C.—Roads and sewers at Gt. Wakering. Offin and Rumsey, South-st., Rochford. Dep. £3 3s.

APRIL 21.

March U.D.C.—(1) Sewers and pumping main (contract M.3); (2) sewage pumping station and storm-water tanks and sewage disposal works (contract M.4). W. H. Radford and Son, Albion-chbrs., King-st., Nottingham.

GENERAL BUILDING WORK (LONDON)

Barnes.—FLATS.—Prudential Assurance Co. to erect 8 flats on 48-52, Ranelagh-gdns.
Barnes.—NURSERY CLASSROOM.—To be erected by B.C. at Railway-st. primary school by Prudential Assurance Co.
Barnes.—REDEVELOPMENT.—Of site bounded by Queen's-ride, St. Mary's-gr. and Putney Lower Common by Barnes Workhouse Charity consisting of erection of 42 houses.
Barnes.—REDEVELOPMENT.—Proposed by B.C. of area bounded by Upper Richmond-rd., Putney, Queens-ride and the borough boundary.
Barnet.—HOUSING.—B.C. seeking loan sanction from M.O.H. for erection of further 10 houses on site 5, Colney Hatch-la.
Bermondsey.—BOILERHOUSE.—Young and Hall, 9, Southampton-row, W.C.1, submitted plans to B.C. for erection of boilerhouse at Guys Hospital, Weston-st.
Bermondsey.—FLATS.—B.C. approved 42 flats on Ainsty-st. area, block 1, and reinstatement of 17 dwellings at blocks 1 and 2 at Whites Grounds estate. Borough Architect, C. J. Burnett (F.), Municipal Offices, Spa-rd., S.E.16.
Brixton.—WORKSHOPS.—For training builders to be added to Brixton School of Building at £30,000.
Ealing.—HOUSING.—B.C. to build 14 more semi-detached houses on Northolt Grange estate.
East Ham.—SCHOOLS.—Proposed schools on Boleyn Castle estate for Castle-st. Roman Catholic schools. Architect, J. E. Sterrett (A.), 17, Ashley-pl., S.W.1.
Edmonton.—CLINIC.—Middlesex C.C. recommended to approve in principle scheme by B.C. to erect maternity and child welfare clinic in Hertford-rd.
Enfield.—OFFICES.—Lerner Machine Co., Ltd., Hertford Works, Bull-la., propose offices at Lea Valley-rd. Architects, Stanley Parks and Brown, High-rd.
Finsbury.—FLATS.—137 flats at Holford-sq. for B.C., £290,000. Architects, Tecton, 29, Sackville-st., W.1.
Fulham.—FLATS.—160 flats to be built by B.C. on Hurlingham No. 2 polo ground.
Great Tattenham.—CHURCH HALL.—Plans for erection of church hall approved by St. Mary's church council, Burgh Heath.
Hanwell.—COMMUNITY CENTRE.—Subject to

approval of M.O.E. Middlesex E.C. to repair and improve Hanwell community centre at £5,000.

Hornsey.—REBUILDING.—Of 15a, Turnpike-la. Plans by L. J. Draper, 30, Coleridge-rd., Finsbury Park.

Islington.—FACTORY.—F. J. Edwards, Ltd., 359, Euston-rd., propose new factory at Upper-st. Plans by C. V. Ponder (F.), 75, Mortimer-st., W.1.

Leyton.—HOUSING.—B.C. applying to Minister of Town and Country Planning for compulsory purchase orders for redevelopment of following: 2-24, Grange Park-rd.; 1-25, 35-41, 2-46, Thornhill-rd.; land at rear of 13-23, Thornhill-rd., 1, 3, 5 and 5a, Goldsmith-rd.; 2-58, Windsor-rd.; 409-427, High-rd.; land at rear of 409-415, High-rd.; land adjoining 2, Windsor-rd.; 2-6, 8-16, 18, 20-28, 30, 32-34, garages at rear of 8-10, and land between 6-8 and 28 and 30, Wilmot-rd.

Leyton.—HOUSING.—B.C. to erect 62 houses at Montague-rd., Hainault-rd., Crownfield-rd., Albert-rd., Canterbury-rd., Murchison-rd., Wallwood-rd. and Colworth-rd.

Leyton.—HOUSING.—B.C. to acquire 87-91, Tyndall-rd.; 1-9 and 2-8, Burgess-rd.; 185-187, Essex-rd.; land in Matlock-rd.; and 11, Duntonrd.

Leyton.—HOUSING.—B.C. seeking compulsory purchase orders for the following for housing purposes: 97-103, Cheney's-rd., 568-580, High-rd., 1-17, King Edward-rd., 57-59, Lea Hall-rd., 140-150, Leslie-rd., land adjoining 79 and 81, Matlock-rd., and 87-91, Tyndall-rd.

Leyton.—HOUSING.—B.C. seeking compulsory purchase orders with view to redeveloping the following: 38-40, 42, 44, 48, 50, 41-53, Harvey-rd.; 87-99, 103-119, Mornington-rd.; 1, 1a, and 2, Leyspring-rd.

London.—SANITARY ACCOMMODATION. — Whitbread and Co., Ltd., Chiswell-st., E.C.1, propose sanitary accommodation at Ship Tavern, Rotherhithe-st. Plans by company's architect, P. H. Banks (F.).

Middlesex.—EXTENSIONS.—Plans by County Architect for extensions to Middlesex T.B. Colony at £208,000. Plans to be submitted in due course to the North-West Metropolitan Regional Hospital Board for its observations and then M.O.H. for final approval.

Mortlake.—FLATS.—B.C. propose 16 flats for aged persons at Mullins-path.

Poplar. — TEMPORARY HOUSING. — L.C.C. to secure sites of 85-99, Fairfield-rd. for temporary housing.

Regent-st.—ALTERATIONS.—Cunard White Star, Ltd., 88, Leadenhall-st., E.C.3, propose alterations and repairs to Union House, 15, Regent-st., W.1, as offices. Company's architects, Willink and Dod, Cunard-bldgs., Liverpool.

St. Marylebone.—T. P. Bennett and Sons (F.), 43, Bloomsbury-sq., W.C.1 are architects for proposed new office building on Messrs. Druce's site, Baker-st.

St. Pancras.—FLATS.—B.C. approved plans for Werrington-st. housing scheme for 40 flats. Chief architect, T. Sibthorp, borough eng. dept., Town Hall, prepared plans with H. A. Sandford, 2, Gate-st., W.C.2, as heating and ventilating engineer. Structural engineer, A. S. Grunspan, 70, Victoria-st., S.W.1.

Streatham.—REBUILDING.—Of 37, 39, 40, 41, 43, 45, 48, Downton-ave. Architect, K. H. Read (A.), 1, Elm Croft, Heene-rd., Worthing.

Surbiton.—FLATS.—Kingston B.C. made compulsory purchase order on site at junction of Grove- and Maple-rds. for erection of 30 flats.

Tooting.—FLATS.—2/3-storey and 1/6-storey flats at Nutwell-st. Architects, Fairweather and Jordan (FF.), 7, Welbeck-st., W.1. Consulting structural engineer, L. Turner, M.Cons.E., 5a, The Pavement, Grove-rd., Sutton, Surrey.

Wanstead. — LIBRARY. — Essex C.C. propose branch library in High-st. Prefabricated construction proposed.

Westbourne-grove.—EXPANSION.—F. Lawrence, Ltd., expanding store. Plans by company's architects, Thomerson and Cowser, 42, Queensway, W.2.

Wood Green.—Tenders shortly to be invited by B.C. for 40 flats, Bounds Green Tube Station site. Plans approved.

Wood Green.—B.C. to expedite scheme for 54 flats, Vincent-rd. Plans by B.E. and S.

Wood Green.—B.C. to invite tenders immediately for 12 flats, Pellatt-gr.

(PROVINCIAL)

Abram.—U.D.C. approved pithead baths at Bickershaw Collieries for Miners' Welfare Commission. J. H. Bourne (A.), 16, Oxford-st., Manchester 1.

Audenshaw.—U.D.C. propose 32 houses. Plans by C. Wild, Bridge-st.-chbrs., 72, Bridge-st., Deansgate, Manchester 3.

Aycliffe (Durham).—Architects for additions at "Gretna Green" Wedding Inn are Crawford & Ellis, 10, Market-pl., Bishop Auckland.

Bakewell.—R.D.C. propose land workers' houses at Over Haddon.

Bedlington.—U.D.C. propose 100 Orlit houses.

Birmingham.—T.C. propose nurses' home at West Heath Sanatorium. Plans by W. N. Twist (F.), Sun-bldgs., Bennetts-hill.—Trustees of Methodist Church propose Methodist Church at Hill Top and New-st. Plans by Crouch, Butler & Savage (FF.), 67a, New-st.

Blaydon.—U.D.C. to erect 50, 46 and 20 aluminium houses at Rowlands Gill, Chopwell and High Spen, respectively. Plans by S.

Bollington.—U.D.C. propose houses for employees nr. Millbrook Waterworks.—Ches. E.C. propose secondary school.

Bolton.—T.C. approved offices at Whowell-st. for S. Talbot & Sons; laboratory at Springfield Paper Works for J. W. Marshall & Co., Ltd.

Bridlington.—Yorkshire Yacht Building and Engineering Co., Ltd., Havelock-pl., propose factory at Industrial Estate, Bessingby-rd.

Burscough.—Lancs E.C. propose secondary school at rear of Stanley Institute off Trevor-rd.

Chester.—C.C. to purchase land adjoining Saughall-rd., Blacon, for housing purposes.

Chesterfield.—Derbyshire E.C. propose infants' school at Holmewood.

Chorley.—Canon J. Cartmell, P.P., St. Mary's R.C. Church, proposes new schools.

Coventry.—Coventry and District Crippled Children's Guild, 55, Holyhead-rd., propose building accommodation at Paybody Hospital and Convalescent Home, Allesley, also new centre at Holyhead-rd., at £5,000. Architects, C. Redgrave & Son, 6, The Quadrant, Coventry.

Deal.—T.C. is to apply to M.H. for approval of scheme for 118 houses at Orchard-ave. site.

Doncaster.—National Disabled Persons' Association propose factory for disabled.

Dover.—Proposed conversion of part of Lord Warden Hotel into offices and alterations to remainder to be run as hotel by Frederick Hotels, Ltd., for Southern Railway Co. Plans by company's architect, J. R. Scott (A.), Waterloo Station, S.E.1.

Droitwich.—R.D.C. propose 40 additional houses. Plans by Pritchard, Godwin & Clist (F.), Bank-bldgs., Kidderminster.

Eccles.—Lancs E.C. propose nursery school at Grasmere-cres.

Edern.—Anglesey C.C. propose county school.

Ellesmere Port.—Board of Ellesmere Port and District Hospital, Whitby, propose nurses' home. Plans by A. Brocklehurst & Co. (F.), 10, Norfolk-st., Brown-st., Manchester 2.

Exeter.—T.C. approved scheme for new school for St. Luke's College Boys' Senior Modern School at Ringwell-av., and site to be acquired for infants' school at Redhills. Plans by City A., H. B. Rowe (A.), 1-10, Southernhay West.

Gosforth (Northumberland).—J. Rowell & Sons, Ltd., Gateshead, seeking licence for hotel at Jubilee-rd. Plans by Cackett, Burns Dick & MacKellar, 21, Ellison-pl., Newcastle-on-Tyne.

Gwyrfai.—Bernard Wardle & Co., Ltd., Whitehall Works, Chorley, propose adaptation of Peblig Mills for plastics factory.

Henley.—Middlesex E.C. proposes to adapt Park-pl. for use as residential school for educationally sub-normal boys at £11,400. Tenders to be invited subject to M.O.E. approval.

Hereford.—Proposed egg-packing and grading station at Holmer-st. for West Midland Egg Packers, Ltd., Hereford. Architects, Scriven, Powell & James, Cathedral-chbrs., King-st., Hereford.

Hereford.—Layout plan for development of Belmont-rd. site to be prepared by city surveyor.

Hull.—E.C. propose dining-room and kitchen at Fountain-rd. school.

Keighley.—T.C. approved:—Layout plans for 82 houses at Highfield estate, Oakworth, Walter Wilkinson, "Oldfield," Oakworth.—E.C. propose 12 nursery schools at Worth, Eastwood, Riddlesden, Parkwood, Highfield, Keighley Church of England, Holycroft, Ingrow, Bracken Bank, Haworth, Oakworth, and Oxenhope, at £228,000. —E.C. propose dining-rooms and kitchens at various schools.

Lancs.—E.C. approved revised scheme for mixed secondary school at Seel-rd., Huyton, at £196,480.

Leigh.—Transport Committee propose bus station on central site.

Longbenton.—U.D.C. to erect 54 houses at Dudley-Annitsford estate.

Lurgan (N. Ireland).—U.D.C. to erect "Orlit" precast houses in Avenue-rd., subject to approval of Stormont M.O.H.

Macclesfield.—Justices approved extensions and alterations at Macclesfield Arms Hotel, Jordangate, for Macclesfield Arms Hotel, Ltd.

Maidenhead (Berks).—Vandervell Products, Ltd., received sanction to erect factory at Cox's Green. Scheme in early stages.

Manchester.—T.C. approved:—Extensions to works at Nutsford-vale, Longsight, for J. A. Turner & Co., Ltd. (H. S. Fairhurst & Son (FF.), architects, Chancery-chbrs., 55, Brown-st.); self-contained canteen at Stock-st., Cheetham Hill, for E.C.

Moreton.—P. E. Rees, P.P., and Managers of Sacred Heart R.C. Schools, propose extensions. Plans by Wm. Ellis & Son (F.), Barclays Bank-bldgs., St. Helens, Lancs.

Newcastle.—Plans by Hetherington & Wilson, County-chbrs., Westgate-rd., Newcastle, for rebuilding Locomotive Inn, Walker-rd., have been approved.

Newcastle.—Thomas Hedley & Co., City-rd., Newcastle, are to make extensions to factory at St. Mary's-st.

Newcastle (Staffs).—Longport Brick & Tile Co., Ltd., propose new brickworks.—T. E. Walley, Ltd., propose tileries at Rosemary Hill.

Plymouth.—Henry Ede & Son, Ltd., Shepherds Wharf, Plymouth, propose warehouse and offices at Sutton-rd. Architects, Parker & Andrew, St. Andrew-st., Plymouth.

Radbrook.—Salop E.C. propose extensions at Walker Technical College.

Reading.—Erection of offices, factory, etc., at Basingstoke-rd., for Tunbridge Jones & Co., 33-37, Castle-st., Reading. Plans by N. Cheney, 65, Kenilworth-av., Reading.

Rochdale.—E.C. propose dining-room and kitchen at Tonacliffe school.

Salford.—T.C. approved:—Extensions for packing warehouse at 85-87, Hope-st., for Lep Transport, Ltd.—E.C. propose nursery school at Littleton-rd., Lower Kersal.

Scarborough.—W. S. Gray, Filey-rd., Scarborough, is architect for additions at Scarborough College, Filey-rd.

Skipton.—West Riding E.C. propose county college.

Southwell.—Notts C.C. propose conversion of Brackenhurst Hall and grounds for County Agricultural Institute at £81,000.

Stockport.—T.C. approved:—Additions at Standard Works, Brooklands-rd., Reddish, for S. H. Heywood & Co., Ltd.; offices, kitchen and dining-room to factory, Swallow-st., for Birkett & Bostock, Ltd.—T.C. propose branch libraries at Brinnington and Portwood.

Stretford.—T.C. approved factory and offices at Warwick-rd. South for Major, Robinson & Co., Ltd. Cruickshank & Seward (F.), architects, 16, Princess-st., Manchester 1.

Summerseat.—Walker & Homfrays, Ltd., Woodside Brewery, Eccles New-rd., Salford, propose rebuilding Hamers Arms P.H., Newcombe-rd., Ramsbottom. Plans by C. E. Bracken (L.), Resident Architects, Brewery Offices.

Urmston.—U.D.C. approved additions to works at Trafford Park-rd., Trafford Park, for Corn Products, Ltd.—Lancs E.C. propose primary schools at Davyhulme and Highfields, Stretford-rd.

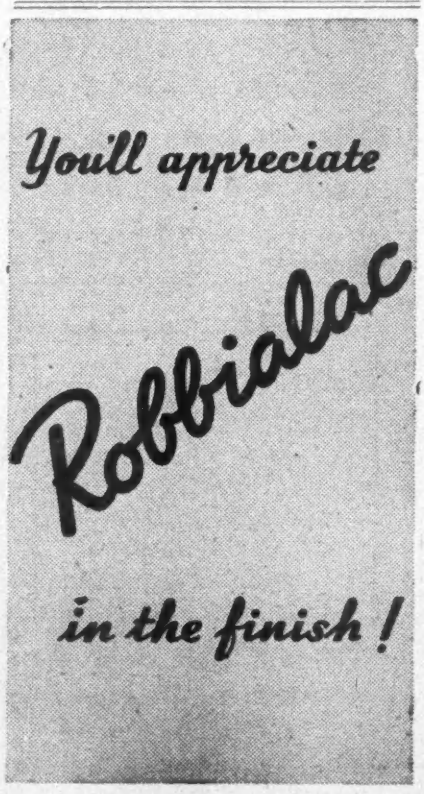
Watford.—Erection of offices at Station estate, Balmoral-rd., Watford, for Watford Co-operative Society, Ltd., St. Albans-rd., Watford. Plans by society's architect.

West Hartlepool.—Marshall & Tweedy, Grainger House, Blackett-st., Newcastle-on-Tyne, are architects for rebuilding of club house at Clarence-rd. for Hartlepools Greyhound Racing Co., Ltd.

Wigan.—R.C. Authorities propose secondary school at Whelley.

Wilts.—Swindon Corporation recommended to approve restoration of Lydiard Mansion. Plans by Whinney, Son & Austen Hall, 37, Norfolk-st., Strand, W.C.2.

Workington. — Cumberland E.C. propose secondary school at Salterbeck estate. J. H. Haughan (F.), County A., 4, Alfred-st. North, Carlisle.



TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Abram.—72 B.I.S.F. houses at Lee-la. site, for U.D.C. H. Allen, S.: *A. Monk & Co., Ltd., Green-la., Padgate, Warrington, £113,248 (including roads and sewers).

Bedlington.—100 "Airey" houses at Stead-la. housing site, for U.D.C. W. Hall, S.: *Direct labour.

Beeston.—County Infants' school at Beeston Rylands, for Notts E.C.: *J. H. Brough & Co., Beeston, £49,280.

Bermondsey.—Extension to premises at 120, Tower Bridge-rd., for John Leaver, Ltd. Architect: Laurence Kennard, 14, Railway-approach, London Bridge, S.E.1: *J. Jarvis & Sons, Ltd., 12, Buckingham Palace-gdns., S.W.1.

Bingham.—10 houses with external site works, Contract "Bingham No. 2"; 12 houses with external site works, Contract "Radcliffe-on-Trent No. 2"; for R.D.C. Professor Sir Patrick Abercrombie & Nickson, 33, Welbeck-st., London, W.1. Quantities by Wm. Newman, 24, Johnson-rd., Lenton, Nottingham: *Frost & Leatherland, Ltd., Dame Agnes-st., Nottingham. Bingham, £12,949; Radcliffe, £15,280.

Bingham.—Two pairs "Airey" houses at Colsten Bassett, for R.D.C. S.: *Jn. Lodge (Keyworth), Ltd., 9, Main-st., Keyworth, Nottingham, £5,751.

Birkenhead.—Alterations and additions to warehouse at Beaufort-st., for Vacuum Oil Co., Ltd., Cunard-bldg., Pierhead, Liverpool 3: *William Moss & Son, Ltd., Roscoe-st., Liverpool 1.

Bucks.—3 pavilion wards at Manor House Institution, Aylesbury, for C.C. F. A. C. Maunder, R.S., Dip.Arch. (F.), A.M.T.P.I., County A., County Offices, Aylesbury: †G. H. Wright, Ltd., 78, New Oxford-st., London, W.C.1. £14,984 (subject to M.H. approval).

Canterbury.—Classrooms, staff room, etc., at Birchington, for Spurgeons Homes, Clapham-rd., S.W.9. R. G. Robinson, F.S.I., architect, 27, Camberwell Green, S.E.5: *A. Simmonds & Sons, 58, Station-rd., Birchington, Kent.

Cumberland.—Erection of Wigton Secondary Modern school, for C.C. Architect: J. H. Haughan, 4, Alfred-st. North, Carlisle: *John Twiname, Ltd., Brigham, Cockermouth, £34,542.

Darlington.—Central kitchen for school meals, Harrowgate-hill, for T.C. E. Minors, B.Sc., A.M.Inst.C.E., B.E.: *E. Lawson, Maude-st., Darlington.

Diss.—Six "Airey" houses at The Heywood, for U.D.C. E. B. Cullin, M.Inst.M.E., S.: *Burrell Bros., 68, Bowthorpe-rd., Norwich, £7,891.

Droitwich.—18 "Airey" houses at Hanbury site, for R.D.C. R. F. Fry, Building S.: *Spicers (Builders), Ltd., Ombersley-rd., Worcester, £24,797.

Dunmow.—Two "Airey" houses at Leaden Roding and six at St. Edmund's Fields, for R.D.C.: *T. Harris & Sons, High-st., Great Dunmow, £2,879 and £9,194.

Durham.—Eight police houses and office at Harrowgate Hill, Darlington, for C.C. G. R. Clayton, County A., Court-la., Durham: *Charles Yeoman, Ltd., Ryhope, Sunderland, £15,937.

Eastry.—"Airey" houses for R.D.C. 30 at Ash: *J. B. Sharman, Ramsgate, £41,929; 22 at Minster: *H. Cro, Ltd., £30,577; 20 at Eastry: *G. Lewis, £27,923; 10 at Woodnesborough: *R. J. Barwick, £14,105; six traditional at St. Nicholas: *H. Cro, Ltd., £8,984.

Edeyrnion.—Eight "Airey" houses with roads and sewers at Pen-y-Bryn site, Corwen, for R.D.C. A. Faulkes-Jones, Cwm Teg, Abbey-rd., Llangollen. Quantities by C. N. Byrom, Bettws-y-Coed: *Clifford Hughes & Co., Ltd., The Firs, Ruthen, Denbs. (subject to approval of Welsh Board of Health).

Elstree.—10 houses and 12 outbuildings at Cowley Hill estate, for R.D.C.: *C. & A. Catchpole, Ltd., Leighton House, Drakes-la., Potters Bar, Middx, £13,381 (approved by M.H.).

Glasgow.—Additions and new erections at Belvedere primary school. Mr. J. MacNab, architect, 129, Bath-st., Glasgow: *Direct labour.

Goole.—10 houses at Moorfields estate, for T.C.: *Bainbridge (Builders), Ltd., Doncaster, £11,750.

Hastings.—War damage repairs at Memorial-chbrs., Robertson-st., for Hastings & St. Leonards Gas Co. Surveyors: Dyer & Overton, 7, Havelock-rd., Hastings: *Llewellyn & Son, Ltd., 5, Warrior-sq., St. Leonards.

Hindley.—50 "Orlit" houses at Castle Hill site, for U.D.C. T. G. Grime, S.: *Unit Construction Co., Ltd., 21a, Brook-st., Knutsford, Ches, £54,147.

Horsham.—Junior Girls' school at Victory-rd., for West Sussex E.C.: *D. H. Broad, Ltd., Worthing, £34,489.

Keighley.—Extensions to Station Mills, Cononley, for Horace Green & Co., Ltd., Dynamo Manufacturers. Builders: *Enoch Harrison & Sons, Nether Ghyll House, Cononley; steelwork: *H. Barrett & Sons, Ltd., 37, Thornton-rd., Bradford.

Liverpool.—Works, for T.C.:—New repair garage at Edge-la. Works, *Tysons (Contractors), Ltd., Dryden-st., Liverpool 5, £9,640; civil engineering work at Clarence Dock Generating Station, *Wm. Moss & Sons, Ltd., Roscoe-st., Liverpool 1, £152,925.

Llandilo.—12 houses, Bryn-av., for R.D.C. N. E. Evans, E. & S., Council Offices, Crescent-rd., Llandilo: *Thomas Higgs, Builder, Bettws, Ammanford, £15,072.

L.C.C.—Contract exceeding £2,500 in value, placed by L.C.C. during period ended February 25. Construction of block 1 of dwellings at Maitland Park estate, St. Pancras: *Tersons, Builders, 2, Seward-st., E.C.1.

London.—Repairs at Victoria Wharf, Upper Thames-st., E.C.4, for Taylor Bros., Wharfage Co., Ltd. Herbert O. Ellis & Clarke (FF.), 58, Grosvenor-st., W.1: *Killby & Gayford, Ltd., 87, Worship-st., E.C.2.

London.—Repairs and alterations at 1, 3, 20, Grosvenor-sq., W.1, for U.S.A. Embassy. Hector O. Hamilton (F.), 19, Hanover-sq., W.1: *Harry Neal, Ltd., 117, Baker-st., W.1.

London.—Repairs to Swan House, Oxford-st., W.1, for Pathé Pictures, Ltd., Wardour-st. Architect: W. R. Glen, F.R.I.A.S., Colquhoun House, Broadwick-st., W.1: *C. M. Liley & Co., 313, High-st., Chadwell Heath, Essex (estimated cost, £8,000).

London.—Construction of three-storey library, New Bond-st., for Royal Society of Medicine, 1, Wimpole-st., W.1. J. J. Joass (F.), 40, St. James-pl., S.W.1. E. R. Babbs & Sons, quantity surveyors, 40, St. James-pl., S.W.1: *Trollope & Colls, Ltd., 41, Great Queen-st., W.C.2.

London.—Conversion of 4, Warwick-sq., W.1, into Chemical Laboratories, for the Polish Board of Technical Studies, 5, Princes-gdns., S.W.7. Plans by Company's architectural staff: *A. G. Crickmore & Co., 19, Kensington Court-pl., W.8.

London.—Repairs at 1-8, Davis-mews, W.1, and 12, South Molton-la., for John Bolding & Son, Ltd., Grosvenor Works, Davis-st., W.1. Architect: Derek Bridgewater, 42, Bruton-pl., W.1: *George Parker & Sons, Ltd., 124, Sumner-rd., S.E.15.

London.—Repairs to premises at Whitehall-pl., S.W.1, for National Liberal Club. Architects: Clyde Young & Bernard Engel, 8, New-sq., W.C.2. Contractors: *Hall, Beddall & Co., Ltd., Pitfield Wharf, Waterloo Bridge, S.E.1.

¶London (Admiralty).—*Portland*: Floating dock berth, alterations and additions to dolphins, A. E. Farr, Ltd., Station-rd., Westbury, Wilts.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended February 28:—Heating and hot water installation: Brightside Foundry & Eng. Co., Ltd., Birmingham 2. General maintenance work: Fred Pearson & Co., Ltd., Doncaster. Painting work: Lewis & Watters, Leamington Spa. Building work: G. & J. Seddon, Ltd., Little Hulton, nr. Bolton; Stanley H. Leach, Twickenham, Middx.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended February 26:—

London: Queen Anne's Mansions, S.W.1, laying damp-proof course over boiler house, Highways Construction, Ltd., Iddlesleigh House, Caxton-st., S.W.1; Selfridges' Annexe, W.1, installation of Plenum heating, Benham & Sons, Ltd., 66, Wigmore-st., W.1; Dickins & Jones Regent-st., W., adaptations for London Telecommunications region, R. Dixon & Sons, 69, Parkwalk, Chelsea, S.W.10; Royal Patriotic School, Wandsworth, S.W., erection of gymnasium, E. J. Logan, 138b, West-hill, Putney, S.W.15. *Beds.*: N.I.A.E., Wrest Park, Silsoe, felling of trees and grubbing up roots, J. Wise, Lower Gravenhurst, Bedford; Clapham-rd. School, Bedford, additional classroom, Haywin, Ltd., Oakley House estate, Oakley, Beds; Riseley Voluntary Primary School, additional classroom, Haywin, Ltd., Oakley House estate, Oakley, Beds. *Cambs*; Parkside C School, Melbourne-pl., Cambridge, kitchen, dining-room and two classrooms, Coulson & Son, Ltd., 37, St. Andrew's-st., Cambridge. *Carmarthenshire*: Experimental Station, Pendine, installation of road lighting and low-tension distribution, B. French, Ltd., Mill-st., Electrical Works, Kidderminster, Worcs. *Ches.*: Cherry Grove School, Chester, erection kitchen, dining-room and temporary building, Edward Pritchard & Son, Ltd., 16, Canal-st., Chester. *Durham*: M.N.I., Grey-st., Houghton-le-Spring, adaptations and additions, Randle & Co., Ltd., Cedric Joinery Works, Back Dunelm, Sunderland; Kelvin Grove School, Gateshead, additional classrooms, Thos. Armstrong, Ltd., Robson-st., Shields-rd., Newcastle/Tyne; West Park Central School, Sunderland, additional classrooms, Geo. Porteous (Bldrs.), Ltd., 16, Norfolk-rd., Sunderland. *Essex*: East Hall Farm, Paglesham, land drainage in connection with erection of Airey houses, A. & C. Lawford, Ltd., 20, Cavendish-gdns., Westcliff-on-Sea; Chelmer-rd. and Barnes Mill-rd., Chelmsford, construction of post office temporary section store garage, E. Scott Hale, Ltd., Globe-rd., Romford, Essex. *Fifeshire*: Auchtermuchty, Junior Secondary School, temporary classrooms, Thos. Anderson, 39, Balburnie-st., Markinch. *Hampshire*: St. Luke's Modern Secondary School, Portsmouth, temporary buildings, John Hunt, Ltd., South Wharf, Cleveland-rd., Gosport. *Herts*: Townsend-dr., Modern Secondary School, St. Albans, additional classrooms, J. T. Bushell, Ltd., 53, Catherine-st., St. Albans; Victoria E.C. School, Watford, classrooms, E. J. Waterhouse & Sons, Ltd., Kings Works, Chipperfield. *Inverness-shire*: Inverness Technical School, temporary classrooms, scullery and dining-room, Duncan Logan (Bldrs.), Ltd., Tulloch-st., Kingwall, Ross-shire. *Isle of Skye*: Broadford Public School, temporary classrooms, Angus MacPhie & Sons, Ardroag, Dunvegan, Isle of Skye.

Kent: Langholme-rd., Beaver-la., Ashford, roads, sewers, foundations, site works and U.S.A. houses, F. Parham, Ltd., 1, Eva-rd., Gillingham. *Lanarkshire*: Bellshill, telephone repeater station, L. B. White, 379, Main-st., Bellshill; Broomfield-rd., Dodside-st., Crowhill-st., Avonspark-st., Glasgow, main water storage tanks and towers, R. Gilchrist & Sons, Ltd., 37, Stevenson-st., Glasgow. *Lancs*: Marcher Clough School, Burnley, kitchen and dining-room, Hattons (Blackburn), Ltd., Clayton-st., Blackburn; M.N.I., 6, Wilbraham-rd., Fallowfield, erection temporary office building and adaptations, P. Hamer, Ltd., Park-st. Sawmills, Swinton, Lancs; Scholefield Mill, Nelson, adaptations for Ministry of Pensions, Wm. Livesey & Sons, Nova Scotia Sawmills, Blackburn: Beach-rd. School, Thornton Cleveleys, removal of shelters and erection of kitchen and dining-room, Fielding & Son, Stanhope-rd., Blackpool. *Middx.*: Copthall Secondary School, Page-st., Mill Hill. Hendon, kitchen and dining-room and demolition of shelters and construction of road, F. & C. Costin, Ltd., 226, Kenton-rd., Harrow, Middx.: Merryfields Primary School, Bincote-rd., Enfield, kitchens and dining-room, Townsend & Collins, Ltd., 2, Brick-la., Enfield. *Staffs*: Richard C. Thomas School and Field-rd. School, Bloxwich, temporary building, Fred Pickering (Bldrs.), Ltd., Rookery-st., Wednesfield, Staffs; Bucknall Modern School, temporary building and a further temporary classroom, G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent. *Stirlingshire*: Lennoxtown Public School, temporary classrooms, Brown, Fraser & Co., Ltd., 24, Durward-ave., Glasgow, S.1. *Surrey*: Bentley, completion of telephone repeater station, Crosby & Co., Ltd., Lion Works, Farnham, Surrey; T.O.B. (Toby Jug), Tolworth, heating and hot-water services, Norris Warming, Ltd., Burley House, Theobalds-rd., Holborn, W.C.1. *Warwickshire*: P.O. Stores Depot, Fordrough-ln., Birmingham, repairs to roofs in blocks A, B, and C, Ragusa Asphalte Paving Co., Ltd., 28, Severn-st., Birmingham. *Worcs*: T.R.E., Malvern (Block "A"), installation of lighting and power, General Electrical Maintenance Co., 20, High-st., Pinner, Middx.: Park School, Nelson-rd., Dudley, temporary buildings, Joseph Webb (Bldg. Contr.), 1, Ivy House-la., Coseley, nr. Bilston. *Yorks*: Maltby-st. School, Sheffield, temporary buildings, J. F. Finnegan & Co. (Sheffield), Ltd., 847, Eccleshall-rd., Sheffield.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended February 21:—

Denbigh: Miscellaneous work, H. Hampson, Chester. *Glamorgan*: Miscellaneous work, J. W. Protheroe & Son, Penarth. *Surrey*: Miscellaneous work, F. W. Honour & Sons, Ltd., East Grinstead, Sussex. *Norfolk*: Road surfacing work, Harry Pointer (Norwich), Ltd., Norwich. *Berks*: Building work, J. W. Jones (Weybridge), Ltd., Weybridge, Surrey. *Dorset*: Miscellaneous work,

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G. J. Furneaux, Ltd., Christchurch, Hants. *Devon*: Building work, W. E. R. Howell, Exeter.

Longbenton.—Laboratory (temporary building), for Northern Counties Training College: *Stanley Miller, Ltd., North-st., Newcastle-on-Tyne.

Malmesbury.—Six "Airey" houses at Lea and 10 at Gt. Someford, for R.D.C. Walter Rudman & Edwards, architects, Market-pl., Chippenham: *Smith & Lacey, Ltd., Corsham.

Manchester.—Alterations and additions to warehouse at Union-st., Bengal-st. and Murray-st., Ancoats, for G. Hurst & Sons, Ltd. Adolph M. Isaac (A.), 28, Deansgate: *G. Margolis & Co., 28, Heywood-st., Cheetham Hill, Manchester 8.

Middlesbrough.—Eight houses at Maldon-rd., for T.C.: *J. Gilmore & Sons, Middlesbrough.

North of Scotland.—Generating station, etc., at Grudie Bridge, for North of Scotland Hydro-Electric Board, Edinburgh. Sir Alexander Gibb & Partners, consulting engineers, Queen Anne's Lodge, Westminster, S.W.1: *J. Bisset & Son, Ltd., Back Hilton-rd., Aberdeen, £174,339.

Oxford.—Additional six houses at Barton No. 4 Estate, for City Council: ‡Hooper & Jones, Magdalen-rd., Oxford, £7,992.

Pickering.—Site preparation and erection of 16 "Airey" houses at Ruffa-la., for U.D.C. Henry Smith, F.I.A.S., Burgate, Pickering: *W. Heptinstall, 29, Newlands Park-cres., Scarborough, £2,099, preliminary and road works as adjusted; £22,080 for 16 houses.

Radcliffe.—16 houses at Bolton-rd. estate, for T.C. H. A. Fox, T.C.: *Wm. Clare, 94, Stopes-rd., Little Lever, £16,940 (12); *Bower, Moffat & Co., Ltd., 90, Deansgate, Manchester 2, £5,603 (4).

Reddish.—Workers' day nursery at Broadstone Mills, for Broadstone Mills Co., Ltd. Major R. Bull, architect, 73, High-st., Cheadle, Ches: *Armstrong Units, Ltd., Ogden-st., Salem, Oldham.

Sandy.—20 houses for agricultural workers at Cambridge-rd. site, for U.D.C.: ‡W. J. Bushby, Ltd., Kempston, £27,997.

Scotland.—Erection of 300 Dorran cottages for rural areas: *R. G. Tarran & Son, Tulloch Works, Perth, £372,000.

Smallburgh.—Airey houses, for R.D.C.:—2 pairs at Catfield, *Tooley & Youngs, £5,491; 3 pairs at Honing, *G. Greengrass, Ltd., £8,227; 2 pairs at Horning, *A. R. Stringer, £5,500; 3 pairs at Neatishead, *Tooley & Young, £8,248; 2 pairs at Paston, *Gray & Son, £5,480.

Stockport.—Canteen and extensions to works at Millgate, for Harvey Briggs (Refrigeration), Ltd. Major R. Bull, architect, 73, High-st., Cheadle, Ches: *William Barrell & Sons, Ltd., Baxter House, Halstead-gr., Gatley, Cheadle, Ches.

Ulverston.—Six houses at Penny Bridge, for R.D.C.: *J. Atkinson, Ayside, Grange-on-Sands.

Ulverston.—36 "Airey" houses at Coniston, for R.D.C.: *P. A. Baines & Son (Northern), Ltd., Culgaith, nr. Penrith.

Urmston.—Additions to works at Ashburton-rd., Trafford Park, for Turners Asbestos Cement Co., Ltd. Builders: *J. Gerrard & Sons, Ltd., Pendlebury rd., Swinton, Manchester; steelwork: *John Booth & Sons (Bolton), Ltd., Hulton Steel Works, Bolton.

Uttoxeter.—10 houses at Bentley House estate, for U.D.C. S. S. Proud, S.: *G. Percy Trentham, Ltd., Wood-la., Erdington, Birmingham 24, £13,774.

West Ham.—New coaling wharf at West Ham "B" Generating Station, for B.C. Merz & McLellan, Consulting Engineers, 32, Victoria-st., S.W.1. Sir Alexander Gibb & Partners, Consultants, Queen Anne's Lodge, S.W.1: *Taylor Woodrow Construction, Ltd., Southall, Middlesex, £116,334.

Whyke, Sussex.—Junior Infants' school, for West Sussex E.C.: *West Sussex General Builders, Chichester, £22,375.

Worthing.—Four houses at Sackville-cres., for West Sussex C.C. Standing Joint Committee: *A. A. Pearce, Ltd., 4, South Strand Parade, Angmering, £7,088.

York.—100 Orlit houses at Muncaster estate, for City Council: *F. Shepherd & Son, Blue Bridge-la., York.

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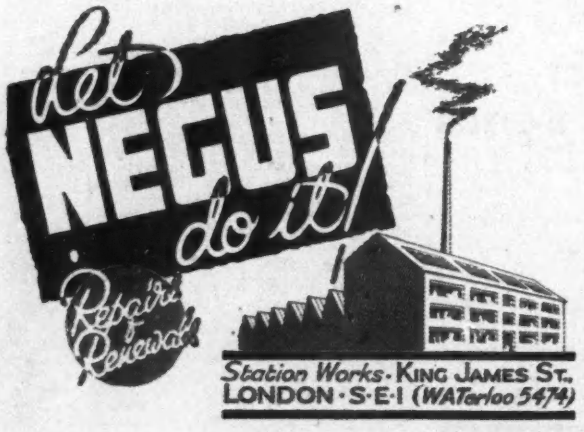

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